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HOME FARMER.

A CHRONICLE OF COUNTRY PURSUITS AND COUNTRY LIFE, INCLUDING BEE-KEEPING.

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## TO OUR READERS.

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PERHAPS the most interesting subjects to the majority of our readers at the moment these lines are penned are Rain and Roses.

A break in the drought is welcome to all; concern for the Roses—the condition of the blooms and the character of the shows—a matter of anxiety with many.

We have passed through a period, which may be termed the chief growing season of the year, that will long remain in the memory, for the absence of rain has been remarkable and abnormal.

Also the Rose season will be remembered as, perhaps, the earliest on record, and there are at least some rosarians who lost most of their best blooms before the shows at which they hoped to win high honours came round.

The loss of Roses at the time they are most wanted is, we will say, a disappointing fact, but the loss of wealth by loss of rain, as represented by the crops (or their absence) in gardens and fields is in not a few instances a grave calamity.

Let us see what the absence of rain means through the period referred to—namely the greater part of March till towards the end of June.

It may be said with an approximation to the actual facts of the case, that every acre plot of land over a great extent of country has lost nearly 600 tons of rain, or more than 135,000 gallons of water that usually falls from the clouds. Every garden of five acres has lost about 3000 tons, or 675,000 gallons. Small home farms of twenty acres have lost, broadly speaking, 12,000 tons of rain, or two and three-quarter million gallons. Farms of 100 acres have dried up under a deficiency of 60,000 tons, or thirteen and a half million gallons; and parishes of 1000 acres have suffered by the deprivation of no less than 600,000 tons, or one hundred and thirty-five million gallons of water which generally falls to refresh the earth during the periods indicated.

This plain narrative is sufficient to show the great difficulties which have beset cultivators, as it also demonstrates the extreme value of a good water supply in gardens.

The drought has also emphasized the soundness of the teaching that has often been advanced by our experienced coadjutors—namely, deep culture, enriched soil, summer mulching, or loose surface tillage.

We sympathise with all who have suffered by the drought, congratulate those who have met it so bravely, and earnestly hope that as compensation usually follows adverse visitations, so a reward is in store for those who have laboured well and are now waiting for their recompense.





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## INDEX.

- ADIANTUMS, REPOTTING, 39;  
farleyense, a fine, 335  
"Advertiser's A.B.C.," 73  
Aérides platyphylm, 397; A.  
vandarum, 293  
Africa, produce from, 30  
Agave rigida, 113  
Agapetes huxifolia, 337  
Aleyrodes, remedy for, 18  
Allamandas, treatment of, 61;  
Hendersoni, 52  
Allotments, in London, 216; at  
Hampton Wick, 255; in  
Islington, 316  
Alocasia macrorrhiza variegata,  
119; A. Sanderiana var. no-  
bilis, 439  
Aloysia citrifolia, 253  
Alpine plants, showing and  
judging, 430, 475  
Alyssum saxatile compactum,  
374  
Amarylises at Chelsea, 252  
Amateur, what constitutes an,  
68, 117, 141  
American light, remedies for,  
16  
American prizes for new pro-  
ductions, 92  
American orcharding, 437  
America's national flower, 39  
Ammonia from gasworks,  
liquid, 40  
Anemones, raising, 326; St.  
Bridget, 315  
Angiopteris evecta, 48  
Angræcum sesquipedale, 46;  
A. fastuosum, 171; A. Sander-  
ianum, 331; A. citratum,  
331  
Anguloas, 473  
Anisanthus splendens, 469  
Annals, popular half-hardy,  
292  
Anthemis alazon, 476  
Anthrums, a white, 50; re-  
potting, 164  
Anti-blight (Potato) powder  
experiments, 105  
Aphis, in winter, what becomes  
of the, 436, 479; life, pecu-  
liarities of, 505  
Apples.—Prices of, 5, 67; too  
many varieties, 14; Dr.  
Harvey, 14, 77; a plethora  
of varieties, 14; Northern  
Spy, 14; the Cobham, 14;  
Frogmore Prolific, 14; Cellini,  
14; new varieties of, 15;  
spraying trees, 10; prices  
and quality of, 25, 111; canker  
in, 25; D'Arcy Spice, 35;  
Fearn's Pippin, 35; on the  
Paradise stock, 36; Mr.  
Fenn's history of Blenheim,  
36; Wyken Pippin, 41, 134;  
from Canada, 28; Wealthy,  
50; manure for, 67, 111; Lady  
Henniker, 77; origin of  
Blenheim Pippin, 77; Lemon  
Pippin, 77; Rambour Franc,  
77; Waltham Abbey Seed-  
ling and Dr. Harvey, 130;  
stock variability, 87; thin-  
ning the branches, 100;  
Russian, 119; unctuous, 130;  
Royal Pearmain, 137; Holland-  
bury, 130; Waltham Abbey  
Seedling, 130; Ringer, 130; a  
cooking test for quality, 140,  
185; Dr. Harvey and Worms-  
ley Pippin, 161; imported,  
154, 216; synonyms, 185;  
Wormsley Pippin, 135; Tas-  
manian, 216; antipodean and  
the R.H.S., 371; Northern Spy  
as a stock, 371; Antipodean,  
packing, 393  
Apple buds and sparrows,  
356  
Appliances, useful, 235  
Apricots, pruning, 142; tree, an  
old, 315; preventing earwigs  
eating, 512  
April, a remarkable, 357  
Aquatic plants, 41  
Aquilegia, 413  
Araucaria imbricata at Kew,  
436  
Arboriculture, lectures on,  
518  
Arnica montana, 401, 415,  
435  
Arnold arboretum, the, 274  
Artichokes, Globe, 308  
Arms, 312  
Asparagus, transplanting, 287;  
treatment of, 308; planting  
and summer treatment, 330;  
A. plumosus, propagating,  
143  
Asters for cutting, 124  
Astwood, old people's gather-  
ing at, 29  
Attar of Roses, 103  
Auricula.—Show, National,  
253, 334; at Slough, 341  
Auricula (National) Society,  
comments on the Exhibition,  
353; (northern section) Ex-  
hibition, 382  
Austrian fruit, packing, 454  
Austrian Pines as wind trees,  
192  
Austrian versus Corsican Pines,  
217  
Autumn, providing for, 127  
Avenue trees, 41  
Ayles, Mrs., death of, 50  
Azaleas, imported, 53; Anthony  
Koster, 3, 7  
  
BACTERIA AND TOMATOES,  
471  
Bananas, a boom in, 9  
Barlow, Mr. Samuel, 92;  
accident to, 374; death of,  
343; in memoriam, 502  
Barometrical readings, low,  
154  
Barometric plants, 72  
Bauhinia candida, 277  
Bean, Sutton's Forcing, 355  
Buckenham Horticultural So-  
ciety, 235  
Bedding, early, 291; notes, 370;  
popular, 457  
Bedding plants, propagating,  
128, 149  
Bees, notes on, 17, 263, 334,  
526; two queens in one hive,  
17, 448; severe winters, 17;  
the tits and their habits,  
18, 39; the weather, 39, 188,  
208, 442, 325, 304, 56; obser-  
vations, 39; white Lupin  
for bees, 39; are bees a  
nuisance? 39; Puncies and  
coloured combs, 49; know-  
ledge of bees, 62; egg trans-  
ference and deposition, 62;  
a bee-killing queen, 62; fennel  
and bees, 62; the Lanarkshire  
hive, 62, 82; soiled honey-  
comb, 62; the season of 1892,  
62; early brood, 82; the win-  
ter and Puncies, 82; cures for  
foul brood, 82; preparing ap-  
pliances, 101; coloured wax,  
101; some things renewed,  
122; sugar cleansing and bees  
dying, 123; storing honey, 123;  
varieties of bees, 123; feed-  
ing, 144, 214; old ones feeding  
young ones, 144; bees and  
electricity, 144; tomits and  
bees, 144; entrances, 164;  
legislation for foul brood,  
164; winter coverings, 164;  
appliances, 188; intercepting  
swarms, 188; young bees, 188;  
varieties of bees, 183; fasten-  
ing comb foundation, 188;  
vicious bees, 238; prolific  
queens, 208; feeding bees, 208;  
hives, 208, 241; effect of the  
winter on bees, 223; several  
queens in a swarm, 226; renew-  
ing combs, 223; best honey  
gatherers, 226; and fruit  
blossom, 234; Cyprian bees,  
286; Mr. Benton and Puncie  
bees, 283; hives and feeding,  
286; Puncies in Ireland, 286;  
the condition of hives, 304;  
Puncies and British bees, 304;  
queen cells, 304; honey—a  
caution, 304; extra appliances,  
304; re-queening—artificial  
  
BEES—Continued.  
swarming, 304; the apiary,  
325; queenless stocks, 325;  
drones and queens, 325; Car-  
niolan queens, 325; bee know-  
ledge wanted, 325; correspon-  
dence, 345; Puncies, 345, 523;  
drone-hive, queen and  
unfed hives, 345; two queens  
in one hive, 346; early swarm-  
ing, 346; excessive honey  
gathering, 366; drone comb,  
366; bees and the weather, 366,  
512; early swarms, 366; join-  
ing swarms, 384; productive,  
great honey yields, the best  
hive, 403; sealed quilts, 423;  
drone hives, 426; enlarg-  
ing hives, 426; painting hives,  
448; sealed covers or absor-  
bents, 448; feeding and super-  
ing, 448; sparrows and bees,  
448; supering, 490; Puncies  
and weight of hives, 512;  
inducing bees into snipers,  
512; the Heather, 512; venti-  
lation—wax extracting, 526;  
honey candying in the comb,  
526  
Beet for size and quality,  
83  
Begonias, winter hearty in, 24;  
weltoniensis, 39; Tuberous,  
sowing seed, 61; Gloire de  
Sceaux, 156; semperflorens  
atropurpurea, 177; decora,  
201; Arthur Malet, 395;  
hedding, 495; at Forest Hill,  
505  
Belvoir, spring gardening at,  
391  
Benary, Mr. Ernest, death of,  
155  
Berberis, notes on the, 436  
Birds and their habits, 9; and  
the weather, 59; a robin, 49;  
and fruit buds, 223  
Birmingham and District Ama-  
teur Gardeners' Association,  
134  
Birmingham Gardeners' Asso-  
ciation, 155, 235; a handsome  
legacy, 199; Amateurs', 457  
Birmingham Fanny Show,  
487  
Bishop, Mr. G. A., 175  
Blossom, of fruit trees, 289;  
early, 356  
Books.—A Primer on Horticul-  
ture, 181; gift of, to Kew, 134;  
"Poems of Life and Nature,"  
193; "Johnson's Gardeners'  
Dictionary," 199; "The Gar-  
den Manual," 296; "The Wild  
Rabbit," 293; "Sixteenth  
Report of Observations of  
Injurious Insects and Com-  
mon Farm Pests," 310; Messrs.  
Rothschild's new work on  
Forestry, 375  
Border flowers, 250  
Border under trees, 286  
Botanical lectures at Manches-  
ter, 177  
Botanic (Royal) Shows, 342,  
43; Children's Floral Fête,  
521  
Botany, in Aberdeens Uni-  
versity, prizes for, 216; in  
America, 235  
Bottling fruit, 410  
Boothby, Mr. G. W., death of,  
92  
Bougainvillea glabra, 326  
Bournemouth Gardeners' Asso-  
ciation, 71  
Brentford Fruit and Vegetable  
Market, 417  
Brighton "New" Horticultural  
Society, 72  
Bristol and West of England  
Carnation Society, 434  
British Fruit Growers Associa-  
tion, dissolution of, 254  
British fungus flora, 134  
Broccoli, 282; the uncertainty  
of, 70, 114; experiences with,  
230; Late Queen, 296, 337  
Bromeliads at Kew, 282  
Brown, Mr. William, death of,  
72  
Brussels Sprouts, 453; and their  
culture, 66; in gardens, 71,  
135, 181, 203  
Bulbophyllum comosum, 94;  
B. racemosum, 419  
Bullfinches and Raspberries,  
478  
Burchellia canensis, 381  
Bunell, death of Mr. J. T.,  
225  
Burning Tree of India, 315  
Butley Tulip Society, 420  
  
CABBAGES, A TRIO OF, 91;  
hastening, 337; Suttons'  
Imperial, 416; competition  
(Messrs. Stuart & Mein's),  
459; spring sown, 499  
Caladium argyrites, 39; Sou-  
venir de Paro, 257  
Calanthe gigas, 129; C. Seden-  
iana rosea, 233; C. striata,  
251; culture of, 293  
Caledonian (Royal) Horticul-  
tural Society and Mr. J.  
McIndoe, 6  
Calliandra Tweedie, 232  
Callistachys longifolia, 142  
Calypso borealis, 381  
Camassia esculenta, 435  
Camellias, sasanqua, 10; at  
Walton Lea, Warrington,  
322; leaf, insects on, 367  
Campanula latifolia alba, 107  
Canker, on fruit trees, 15, 25, 27,  
47, 115, 131, 152, 497; a review  
of soils, 47, 68; proposed ex-  
periments, 98  
Caraguata cardinale, 237  
Carnation, hardy, 71; tying,  
72; Margaret, 108, 113; raising  
seedling, 110; fungus in, 165;  
two very old, 205; three good  
horder varieties, 233; for pot  
culture, 233; Souvenir de la  
Maison, 284, 322; Winter  
Cheer, 317; in America, 337;  
Pride of Britain, 356; nema-  
todes on, 463; disease in, 489;  
Margaret, 499  
Carnation (National) Society,  
date of Show, 456  
Carnation Society, Midland  
Counties, 155  
Carnation Society for Western  
England, 416  
Carrot, early, 119; grubby, 234;  
Suttons' Early Gem, 435, 456  
Caterpillars and Euonymuses,  
491, 407  
Cattleya labiata alba, 23; C.  
Percivalliana, 171; C. War-  
sewiczii autumnalis, 171; C.  
Mossie Howardiana, 453  
Cauliflowers, forcing, 38; early,  
119, 163  
Cedar, the sweet-scented Bar-  
hadore, 347  
Cedars, The Wells, 420  
Celery, White Plum, 8; and its  
cultivation, 159; exhibition  
of, 177; analysis of, 208  
Cephalotus follicularis, 513  
Cereus grandiflorus, medicinal  
properties of, 9; the Night-  
blooming, 478, 498, 516  
Certificated plants, 1859—1891,  
133  
Chauvé, Mons Jean-Eugène,  
death of, 235  
Cherries, early gathering, 453  
Cherry house, 17, 80  
Cherry tree, value of, 112  
Chicago, World's Fair, accom-  
modation at, 133  
Chiono-oxa Tmolasi, 315  
Choisya ternata, 338  
Chrysanthemum (National)  
Society.—General Committee  
meeting, 12, 202; the doings  
of, 12; members condemned,  
12, 36; Mr. Godfrey's griev-  
ances, 37; the Beauty of Ex-  
mouth case, 51, 96; three-days  
exhibition, 93; Mr. Godfrey's  
challenge, 97; "slips," Mr.  
Godfrey's letter, 116; Com-  
mittee meetings, 186, 318;  
annual meeting, 158; election  
  
CHRYSANTHEMUM (NA-  
TIONAL) SOCIETY—Contd.  
of officers, 189; comments on  
the annual meeting, 180;  
and Mr. Dean, 221; how the  
N.C.S. conduct their business,  
222; the Secretary's letter,  
222; Floral Committee of the  
N.C.S., 240; resignation of  
Mr. Shea, 240; Mr. Shea and  
Mr. Gordon, 258; Mr. Dean  
and the N.C.S., 278; the  
N.C.S. Committee versus God-  
frey and others, 258; Mr.  
Dean and Mr. Trinder, 278;  
Floral Committee of the  
N.C.S., 278; vitality of  
N.C.S., 298; Imbroglia, 318;  
annual outing, 456  
Chrysanthemums.—Pidsley's  
Favourite, 13; John Lam-  
bert, 13, 37, 54, 46; Mrs. A.  
Hardy, 13; profitable Chrys-  
anthemum growing, 13;  
cuttings for dwarf plants,  
18; Princess May, 37; Secre-  
tary Farson and Miss Mare-  
chaux, 37; new, 37; Golden  
Wedding, 54; Croydon Show,  
date of, 51; Mrs. L. C. Ma-  
delra, 54, 96; Lygus cam-  
pestris as an enemy, 54; for  
profit, 54; Hull and East  
Riding Chrysanthemum So-  
ciety, annual meeting, 54;  
increased size of stands, 55,  
73, 96, 116, 130; new, 55;  
show boxes, 75; decline in  
incurred blooms, 73; English  
raised varieties, 76; Louis  
Boehmer, 76; for late flower-  
ing, 76; hirsute varieties, 76;  
N.C.S. examinations, 77; J.  
H. Taylor, 93, 131; L. Canning,  
96; Faversham Chrysanthem-  
um Society, 116; profitable  
Chrysanthemum growing,  
117; Windsor and Eaton  
Chrysanthemum Society, 116;  
Faversham and District  
Chrysanthemum Association,  
"Kent county competition,"  
186; Sheffield Chrysanthem-  
um Society, 136; hairy  
Chrysanthemum, 136; New  
Year's Gift, 137; growers in  
conference, 147; an American  
notion, 158; dwarf plants,  
158; September varieties out  
of doors, 158; single flowered  
varieties, 158; profitable  
Chrysanthemums, 158; as  
annuals, 189; Mrs. Jacobs,  
180; judging cut blooms—  
by comparison, 180, 202, 240,  
258, 278, 293; the Hull  
schedule, 293; early flower-  
ing, 221; Sheffield Chrys-  
anthemum Society, 221; graft-  
ing Chrysanthemums on  
Anthemis frutescens, 210;  
Etoile de Lyon in April, 278;  
at Earlswood, 279; new  
Americans, 293; early flower-  
ing, 293; ugly names, 298;  
hairy Chrysanthemums, 293;  
layering, 304; objectionable  
varieties, 319; seasonable  
notes on, 393; propagating  
new or scarce varieties, 440;  
wall plants, 440; Madame  
Desgrange in borders, 440;  
Madame H. Fortanier, 440;  
Chrysanthemum literature,  
440; early Chrysanthemums,  
440; American Chrysanthem-  
um shows, 440; new French  
varieties, 440; Italian Chrys-  
anthemums, 440  
Cinerarias, at Reading, 78;  
horned, 151; culture of, 281;  
maritima variegata, 433  
Claremont, notes on, 79  
Claremont, Taunton, 319  
Clematis, Duchess of Edin-  
burgh, 18  
Clerodendron Thomsonae, 72;  
Balfourianum, 81  
Cilanthus pinnatus, 417  
Clifford, Mr. J. R. S., test monial  
to, 295



Clover and Grass seed harvest of 1892, report of, 20  
Cobs, planting and training, 69  
Coccyne odoratissima, 153; C. flaccida, 171; at The Briars, Reigate, 171; C. conferta, 193; C. Sanderæ, 318; C. cristata, 433  
Colorado, the climate of, 78  
Colon and quality, 30  
Conifers at Dropmore, 311  
Corbridge and District Gardeners' Society, 112  
Cotoneaster horizontalis, 395  
County Council horticulture, 315  
Crickets, destroying, 416, 457  
Crocus vernus or Spring Crocus, 227  
Croydon Horticultural Society's Show for 1893, 8  
Crystallising fruits, 196  
Crystal Palace, flower shows at, 133; spring Show, 260; show, 400  
Cuckoo, the, 274  
Cucumbers, early fruiting, 17; early, 81; treatment of, 163; for market, 309; and Melons at Rowledge, 436  
Currant mite, black, 154; Black, 200; bush, an eccentric, 519  
Cycas revoluta flowering, 356  
Cyclamens and Cinerarias at Reading, 78  
Cyclamens, Messrs. Sutton's strain, 135; at Ham Common, 177  
Cynoches pentadactylon, 94  
Cymbidium grandiflorum, 153  
C. Lowianum, 376  
Cypripedium Germianum, 67; C. Johnsonianum, 171; C. Conco Lawre, 193; C. Pene-laus, 219; C. grande, 391; X Charles Richman, 517  
Cyrtodera refulgens, 395  
Cytisus Scoparius Andreanus, 235

DAFFODILS, THE WAYS OF, 263  
Dahlias, for show, 25; analysis 1883-92, 247; Mr. Wilford's paper, 484; the, 504  
Dahlia (National) Society, annual meeting, 217  
Daisies, from seed, 254; on lawns, 327  
Dean, portrait of Mr. William, 477  
De Candolle, Alphonse, 297  
Den drobiium Findieyanum, 193; D. formosum giganteum, 193; D. Devonianum, 219; D. nobile in small pots, 233; D. chlorostele var. Owenianum, 234; D. Burfordiense, 263; D. Brymerianum, 376; D. thyriflorum, 418  
Dendrobium, new, 397  
Dessert table, decorating a, 385  
Deverill, Mr. Henry, death of, 235  
Devon and Exeter Gardeners' Association annual supper, 29  
Devon and Exeter Horticultural Society's Exhibitions in 1893, 9  
Dew, 275  
Dickson, Mr. G. A., 29; presentation to, 217  
Dionaea muscipula, 200  
Dobbie & Co.'s social meeting, 10  
Docks and poor soil, 478  
Dodwell, Mr. and Mrs., testimonial to, 275  
Dodwell Testimonial Fund, the, 314  
Dracæas, repotting, 81; propagating, 395; Sanderiana (thalioides fol. var.), 389; Sanderiana versus D. thalioides, 418  
Dropmore, Conifers at, 311  
Drought and fire engines, 356  
Dry spring, 355  
Dry weather, and how it was met—a comparison, 329  
Dukeries, a day in the, 461

EARLS' COURT EXHIBITION, 1893, 212, 369; shows at in 1893, 273; Orchid Show, 420; flowers and music at, 516  
Echeveria Peacocki, 457  
Edelweiss farm, an, 417  
Embothrium coccineum, 508  
Education for gardeners, 38  
Educational gardening, silver medal essay, 9, 44; books to consult, 44  
Electric light and plant structure, 434  
Electro-horticulture, 198  
E'ham Rose and Horticultural Show date of, 50  
Erica cinerea, 479  
Ermine moth, small, 497  
Essay, silver medal, 9, 149  
Estate management, 236  
Encharis, failing, 40; a huge, 155  
Eulalia japonica, 39  
Enonymuses, caterpillars on, 401, 497  
Eurya latifolia variegata, 239

Exhibiting Carnations and other flowers, 100  
Exhibitors, crafty, 135  
Exhibitor's produce, a delay of, 51

FADYENIA PROLIFERA, 490  
Farming.—The new year, 19; work on the home, 19, 42, 64, 84, 104, 125, 146, 166, 190, 210, 228, 246, 266, 288, 306, 328, 348, 368, 386, 428, 450, 470, 492, 514, 528; production and distribution, 41; price of Wheat, 42; the "Live Stock Journal" almanac for 1893, 42; the Royal Journal 63; the prevention of Potato disease, 83; Vinton's Agricultural Almanac, 84; basic slag, 104; spring cropping, 125, 145, 166, 190; bee pasturage, 126; enlargement of farms, 126; value of farm produce, 126; farmery, 146; poultry farming, 146; Potatoes, 190; "Farming," 209, 265; manure for pasture, 210; corn crops, 228; butter, 245; green and root crops, 246; prudence in education and rural prosperity, 266; food for live stock, 287, 305; clover crushing, 306; draining heavy clay, 306; live stock, selection and breeding, 328; pasture ready for grazing, 328; heavy land, 348; fruit and vegetable farming, 367; Prickly Comfrey, 368; bottling fruit and vegetables, 368; crops, 386; winter Oats, 408; provision for winter, 428; provision for summer, 450; Dandelions in pasture, 450; a spring drought, 470; trade exhibits at agricultural shows, 470; the dairy, 492; two farms—a contrast, 514; great drought, the, 523  
Farmer's wife aroused, a, 211  
Ferns, culture of, 169; spores, sowing, 227  
Fertilisers, and soils, experiments with, 10; and Feeding Stuffs Bill, the, 499  
Figs.—Forcing, 101, 143, 187, 404; trees, transgressing, 177; decaying at the base, 347  
Fiberts, planting and training, 60  
Floors Castle Grape room, 223  
Florists' flowers, seasonable hints on, 130, 393  
Flower garden, 61, 121, 207, 285, 323, 364, 405, 447; sub-tropical plants for, 489  
Flowering shrubs, April, 331  
Flowers, hardy, 24; seasonable, 43; by telegram, 72; and plants for autumn, 192; notes on hardy, 388; odours of, 479; double, 501  
Forestry exhibition, 216  
Forking among fruit trees, 100  
Fourcroya seloa, 155  
Foxglove, campanulate, 468  
Freemasons, the Hortus Lodge of, 356  
Freestias, some fine, 176  
French Botanical Institute, a, 92  
Fritillarias, 411; F. triplicifolia, 411  
Frost in Stirlingshire, 9  
Frozen flowers at Ipswich, 177  
Fruit and Potato Traders' and Growers' Benevolent Society, 256  
Fruit—flavour and yellow flesh in 10; forcing, 16, 38, 60, 80, 100, 121, 143, 162, 187, 206, 225, 243, 261, 284, 302, 323, 344, 364, 382, 424, 447, 465, 510, 525; cultivation and imports, 74; from the Cape, 71, 295; thinning, 92; growing in California, 92; culture in the Scilly Isles, 112; blossom, 185; blossoms, protecting, 194; culture, practical and scientific teaching, 212; prospects, 232; from Australia, 295; culture, aids and hindrances in, 312, 341; labelling foreign, 337; crops, prospects of, 378; prospects and insects, 392, 414; bottling and preserving, 410, 427, 449; packing Australian, 454; prospects in Lancashire and Cheshire, 482  
Fruit trees—manuring, 6; canker in, 15, 47, 68, 131, 516; winter cleansing, 16; removing moss from, 16; scale on, 16; American blight and aphides on, 16; cost of manuring, 38; spraying, 73, 133; planting in spring, 124, 187; in blossom, netting, 244; caterpillars on, 245; at Earl's Court Exhibition, 314; spraying fruit trees at Evesham, 316; watering and mulching, 374; insects on, 375; insects on (Board of Agriculture recommendations), 414; on railway embankments, 417; pruning young, 488; borders, moistening, 523; feeding, 525; on walls, syringing, 525

Fruiters' Company, banquet of, 93  
Fruit garden notes, and insect remedies, 404  
Fuchsias, culture of, 57  
Fungi in a Mushroom bed, 385  
Fungicides, experiments with, 172  
Fungus spoiling Mushrooms, 103

GARDEN, AN ELEVATED, 184; the influence of, 412  
Garden flowers, useful, 218  
Gardener, duties of, 189; a centenarian, 479  
Gardeners' associations and situations, 135, 173, 252  
Gardeners' friends and enemies, 51  
Gardeners' Orphan Fund, 40, 52, 133; Royal patronage of, 30; annual meeting, 117; (Royal) Orphan Fund, 154, 335; annual dinner, 360  
Gardeners' Royal Benevolent Institution, 30, 113, 332; annual general meeting, 58; "Lark Fudding" dinner, 59; an appeal to gardeners, 85; assistance from Reigate, 133; acts of kindness, 234; annual dinner, 519  
Gardeners' Saturday half holiday, 336  
Gardenias, treatment of, 102  
Gardening and Forestry Exhibition at Earl's Court, 133, 369; opening and flower Show, 393  
Gardening, economical, 22; appointments, 30; education in, 44; books for, 41; tasteful, 164  
Gardening societies, national, 44  
Garret, Mr. John, death of, 252  
Ga-terias, culture of, 346  
Gastrolobium villosum, 79  
Gentians, 374  
Gesnera blooms falling, 50  
Ghent, Quinquennial Exhibition, 294; Show, the, 322; English exhibits at, 336  
Gilla Brandege, 161  
Gladious Colvilli The Bride, 415  
Gloxinias, starting, 39; all the year round, 155; at Shrover Hall, 455; failing, 469; at Chelsea, 477  
Goodrich Court, 53  
Gooseberries, early, 374  
Gooseberry caterpillar, 274  
Gooseberry trees and soot, 177  
Gordon Boys' Home, he, 217  
Grafting, preparing for, 100; does the wood of the scion and stock unite? 272, 343, 379; in summer, 479  
Grape—keeping, at Floors Castle, 31, 79, 117, 203; late, 38; large bunch of, 29; in America, English Gros Colman, 113; thinning, 162; keeping, 172; Chasselas Napoleon, 199, 229, 249, 268, 291; at Floors Castle, 239, 256  
Grass seed harvest of 1892, report of, 20  
Grimwood v. Wells, 396  
Gymnogramma chrysophylla culture, 367  
Gypsophila repens, 475

HABERLEA RHODOPENSIS, 507  
Hamamelises, 134  
Hampton Court, spring flowers at, 295; Court Home Park, 353  
Harbingers of spring, 205  
Hardy fruit garden, 16, 60, 100, 142, 187, 242, 284, 323, 364, 446, 525  
Hardy flowers—selections invited, 24; showing and judging, 46; tubes for, 68; notes, 105, 148, 230, 290, 352; in June, 493  
Hawthorn blossom, early, 338  
Haze-bud gall mite, 320, 358  
Hazel bud and Pear mites, 392  
Heating, experience in, 87, 118, 132, 156  
Hedysarum multijugum, 479  
Helianthemum, 35  
Hepaticas, a pea or, 183  
Hesslewood, 501  
Hibbertia, dentata, 232; perfoliata, 353  
Hilling among vegetable crops, 412  
Holloway, ring oars at, 232  
Honey producing plants of Australia, 376  
Horticultural Club, 316, 333; annual dinner, 156; discussion on home and foreign fruit, 236  
Horticultural examinations, 254, 518  
Horticultural Exhibition at I-lugton, 29; the International of 1892, 29

Horticultural press, the world's, 8  
Horticultural progress, sixty years of (1760-1820), 270  
Horticultural (Royal) Society Committees, 30, 32, 33, 55, 138, 220, 258, 298, 333, 380, 459, 506; Council of, 49; lectures, 52; certificates, general distribution, 13, 2, 94; Journal, 135; annual meeting, 139; report of the Council for 1892, 140; Scientific Committee, 182, 238, 279, 313, 362, 411, 517; lecture on effects of coloured glass on plants, 221; lecture on "Flowers in the Riviera," 259; lecture on "Orchid Life in New Guinea," 299; lecture on Alpine Flowers, 334; lecture on "How to Solve Chemical Questions Concerning the Soil," 381; lectures on "Hardy Rhododendrons and Azaleas," 460  
Horticultural scholarships, 50; instruction, 50  
Horticultural Society for Gravesend, Amagamaei, 113  
Horticultural (United) Benefit and Provident Society, 30  
Horticulture, popular, 57; lectures in, 51; the advance of, 167; a primer on, 181; practical and scientific teaching in, 212; in Surrey, 336; music and the fine arts, 390; in the north, 417; in Russian schools, 501  
Hours of labour in gardens, 357  
Hurst, Mr. Benjamin, 216  
Hurst & Son, Messrs., Jubilee celebration, 435  
Hyacinths, double Italian, 82  
Hybridisation and improvement of plants, 93

ICE, STORING, 63  
Index Kewensis, 519  
Insects, on the flower garden, 107, 308, 476; on Camellia leaves, 367; wingless, 372, 413; infesting Raspberries, 419  
International Fruit Show, the proposed, 148  
Ireland, notes from, 56, 262, 340  
Irish industries, 274  
Iris, reticulata, 236; Saari nazarensis, 373; Lorteti, 485  
Isle of Wight Rose Society's Show, 510  
Ixoras, treatment of, 61

JAPANESE PLANTS AT CHICAGO, 8  
Jottings from memory, 217  
Judas Tree, the, 113; poison, effects of, the nectar of, 49

KARRI WOOD FOR PAVEMENT, 112  
Kew arboretum, the, 435  
Kew Bulletin, 394  
Kew Gardens, early opening of, 154  
Kew Guild, 216; Journal, 409  
Kew, noteworthy objects at, 231  
Kingston gardeners, 93  
Kingston and Surbiton Gardeners' Association, 155, 458  
Kirkstall Abbey grounds, 217  
Kitchen garden, the, 88, 120, 163, 225, 262, 308, 344, 383, 423, 466, 511  
Kölreuteria paniculata, 357

LABELS, GLASS, 10; IN KINGSINGTON GARDENS, 91; LEAD, 71  
Laird's, a call at, 272  
Lælia, virens, 75; hybrida Maynardi, 473  
Lælio-Cattleya x Brymeriana, 172; L.-C. Ascania, 351  
Lampost Hall, flowering shrubs at, 418  
Land and estate decadence—an impeachment, 191  
Land, testing the fertility of, 436  
Lapagerias, unhealthy, 287; requirements of, 491  
Larch disease, the, 292, 371, 415, 433  
Lathyrus hirsutus, 393  
Lawns, moss on, 165  
Leaf-cutter bee, 463  
Leaf sponger, Atkinson's, 205  
Lectures at the Royal Horticultural Society's meetings in 1893, 52; in horticulture, 51  
Lee, Blackheath, and Lewisham Horticultural Society, 29; annual meeting, 51  
Leeds Paxton Society, annual dinner, 134  
Leicester Chrysanthemum Society annual meeting, 93; excursion, 519  
Lettuce, early, 119; Commodore Nut, 338; Winter Cos, 396

Lilacs, forcing, 62  
Lilies versus Roses, 128, 200  
Lilium Harrisii, 335  
Lily of the Valley, culture, 113; failing, 245  
Lime, dressing manured ground, 83  
Lime juice, 336  
Linaria hepaticifolia, 475  
Linum perenne, 395  
Liverpool Horticultural Association, 71, 93  
Lobelias, sowing, 61  
Loofah, or Vegetable Sponge, the, 82  
London flowers, early, 217  
London purple and Gooseberry caterpillars, 393  
Lycaste Baringtoniae, 94; L. plana, 198  
Lychnis, vespertina flore-pleno, 29; chalcidonica, fl.-pl., 106; chalcidonica, 133  
Lyle, Mr. Peter, 423

MACKELLAR, MR. A., 173  
Mackey's, the late Sir James Wm., business, 50  
Magnolias, conspicuous, 276; deciduous, 315, 331  
Manchester Whitstide Show, 421  
Maindoff Court, 6  
Mangold Wurtzel as woodlice traps, 185; plants eaten off by grubs, 527  
Manures, lectures on, 9, 51; for and temperature, 49; fruit, 67; for roots, 102; for fruit trees, 111; for Orchids, 114; and their uses—silver medal essay, 149, 173, 212  
Manuring fruit trees, 6; cost of, 35, 133  
Marguerite leaves, grubs in, 145  
Market produce, 52, 515; reports, 63; prices, 346, 384, 451, 472  
Masdevallias, hybrid, 45  
Maxillaria Harrisonia, 418; M. Sanderiana, var. xanthoglossa, 494  
May, the glories of, 370  
McIndoe, Mr. J. and the Royal Caledonian Horticultural Society, 6  
McKenzie, Alexander, death of, 254  
Mealy bug on Vines, 66, 113  
Measuring trees, 189  
Meibomia erythroxylon, 394  
Melons, sowing, 61; treatment of, 225; culture, practical hints on, 267, 291, 309, 430; plants gumming, 407; flowers not opening, 449; plants for cold pits, 468; culture, canker and insects, 472; at Rowledge, 486; seasonable notes on, 525  
Meteorological (Royal) Society, 29, 161, 239; observations at Hodsock Priory, in December, 30; observations, 64; at Workshop for 1892, 151; observations at Hodsock Priory, Workshop, during January, 113  
Mexican jumping seed, 71  
M'Hattie, Mr., proposed testimonial to, 255; presentation to, 356  
Mildew, remedy for, 169; in vineries, 206, 233; on Peaches, 269  
Miltonia vexillaria, temperature for, 494  
Mistletoe and the French Government, 395  
Morisia hypogæa, 394, 475  
Moss and lichen, removing from fruit trees, 16; on lawns, 144  
Mulching, 454  
Mushrooms, and Tomatoes, 4; in the north, outdoor, 49; growing, 226; covering, 71; in soil, growing 86; fungus destroying, 102; in summer, 145; starved, 182; removing beds, 188; manure for, 188; at Perth, 335  
Myosotis alpestris, multipetalous var., 491

NARCISSI, FROM THE SCILLY Isles, 113; Exhibition at Birmingham, 363  
Narcissus fly and Amaryllis bulbs, 314; fly, 497  
Narcissus, Paper White, 74; a good, 217; Florence, 415  
National Amateur Gardeners' Association, 9; annual meeting, 112  
Native guano, 93  
Nectarines, for forcing, 46; Lord Napier, fruits shrivelled and rusted, 523, 527  
Nectarine tree, dwarf, 443  
Nepenthes, repotting, 164  
Newcastle spring show, 341  
New year's greeting, a, 1  
New Zealand gardens and climate at Christmas, 110  
Nitrate of soda, in its native state, 276; in solution, 305  
Norfolk and Norwich Horticultural Society, annual meeting, 93







Shrubs and trees for clay soils, flowering, 41; early flowering, at Kew, 205; April flowering, 331; flowering, 432  
Silver medal essays, 71  
Slugs, destroying, 346  
Small holdings near London, 481  
Smith, Mr. E. D., 45  
Snowdrops, the best, 21; large, 374  
Societies' amenities, some, 236  
Sobralia Lucasianum, 74; S. sessilis, 153  
Soils and fertilisers, experiments with 10  
Soils, a review of, 47, 63  
Soot, a good manure, is, 199, 260  
Sowbread and Swine's Snout, 256  
Sparrow, the scoundrel, 341, 375, 444; the, for and against, 463, 481  
Spiders, 476  
Spiræas, 253  
Spring bedding prospects, 233  
Spring in a Scottish manse garden, 307  
Steam v. hot-water heating, 480  
Steel, Mrs., death of, 435  
Stephanotis, floribunda, 61; fruits, 479  
Stimulants for plants and trees, 124  
Strawberries, profitable, 5; in pots, 81, 163; planting, 242; average weight of, per plant, 245; for forcing, 332; early, outdoors, 355, 374; trains in America, 458; an excellent early forcing, 458; notes on varieties, 476; large fruits of, 480; notes on, 504; Noble, 504; the Gunton Park, 521  
Strobilanthes Dyerianus, 359  
Stylophorum diphyllum, 521  
Sulphate of ammonia, using, 347  
Sulphate of iron, for fruit trees, 9; added to sewage, 264  
Summer beverages, 457  
Sunshine, in Regent's Park, 234; in March, 294

Superfuous growths, 352  
Superphosphate of lime, 305  
Swanland Manor, 501  
Sweet Peas for bunching, 124; in May, 395  
Syringa Josikæa, 394  
Syringes, Messrs. Benton and Stone's, 205

TASMANIA, GARDENS IN, 338  
Tea garden at the Crystal Palace, 235  
Tea industry of Ceylon, 376  
Teignmouth Gardeners' Improvement Association, 93  
Temperatures, low, 73  
Temple Show, the, comments on, a grand crush, 429; report of, 440; certificates and awards, 444  
Tennis lawns, wet, 145  
Thistle, an edible, 435  
Tinnea æthiopica, 35  
Tits, and their habits, the, 50; the long-tailed, 201  
Tobacco culture in Australia, 112  
Todea superba, 512  
Tomatoes, and Mushrooms, 4; Lady Bird, 15; white fly on, 18; preserving whole, 10; from Africa, 30; large, 40, 51; Royal Sovereign, 40; winter, 50, 337; Ponderosa, 51; and cancer, 72; seasonable notes on, 86; renewing soil for, 141; artificial manures for, 145; old plants, 225; newly raised plants, 224; for profit, 257; overcrowded, 270; pollination of flowers, 350; growing, 360, 272; pollination of, 416, 456; in greenhouse, 468; bacterial disease in, 471; fungoid disease, 491; notes on, 505  
Torquay District Gardeners' Association's annual dinner, 50  
Tranby Croft, 483  
Trapa bicornis, 426  
Trees, for clay soil, flowering, 41; measuring, 189

Trentham and Hanford Horticultural Society, 294  
Trentham, a visit to, 507  
Treseder, Mr. T., death of, 255  
Tropical vegetation, 114  
Tubes for hardy flowers, 63  
Tulips, in pots, 49; English, 349; Messrs. Barr's, 349; Dr. Hogg's, 350; late garden, 374; for gardens, 388, 394  
Tulip Shows, National, 374, 402; at Butley, 420; Wakefield, 445  
Tulips, late decorative, 414  
Turnips, early, 163  
Tymons, the Rev. Frederick—in memoriam, 52

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY, annual meeting, 224  
Urceocharis Cibrani, 183  
Utricularia rhytrophylla, 231

VEGETABLES, GREEN, 316; preserving, 410  
Veitch Memorial prizes and medals for 1893, 49  
Veitch, presentation portrait, 394  
Veronica spicata vera (?), 107  
Vinery, plants in a, 18  
Vines—scale on, 40; in pots, 38, 102; early, 38; pruning, 38; pruning and cleaning outdoor, 60; mealy bug on, 66; forcing, 80, 121, 162; raising from eyes, 80; cut-back, 80; unsatisfactory, 83; leaves, functions of, 89, 114; stimulants for, 121; late, 121; in flower, 121; pruning, 124; closely stopping laterals, 131; distance of, for profit, 141; feeding, 161; close pinching and planting, 155, 176; and Vine stocks, 163; summer pruning, 223; starting weakly, 245; summer pruning, an object lesson, 281, 352;

VINES—Continued.  
planting in spring, 307; making borders, 307; Vines and Vine stocks, 316; leaves perforated, 366; leading shoots of, 426; work amongst 455; thrips on, 469  
Viola, new, 135; under glass 280; in frames, 237; management, 316; Violas, Messrs Dobbie & Co.'s essay, 477; sports from, 490

WAGES, ARREARS OF, 189  
Waldsteinia trifolia, 99  
Wakefield Amateur Tulip Show, 445  
Wakefield Paxton Society, 217, 376; annual dinner, 311  
Walkley Amateur Floral and Horticultural Society, 154  
Wall trees, pruning and nailing, 100  
Waltham, a visit to, 463  
Wasps' nests, 518  
Water-edge plants, 10  
Watering, mulching and shading, 454  
Water, using, 185; supply of our gardens the, 494  
Weather—in the north, 8, 28, 49, 71, 92, 112, 133, 154, 176, 234, 314, 416; in London, 8, 28, 49, 71, 92, 112, 133, 154, 176, 234, 314, 416, in Stirlingshire, 29; during December at Ripley, 30; in mid-Wales, 31; in Warwickshire, 30, 416; in December at Ketton Wood, 30; and the birds, the, 59; in 1892, 74; last month, 113; severe in Yorkshire, 176; in February, 200; severe in Wiltshire, 234; in America, 236; in March in Hampshire, 256; in the midlands, 257; in March, a remarkable month, 275; last March, 295; at Swanmore, 295, 315, 337; in Yorkshire, 314; dry, and how it was met—a comparison, 329; dry, records

WEATHER—Continued.  
of, 354; dry weather in France, 356; at Swanmore, 374; during April, 375; in May, 458  
Webster, Mr. J. B., death of, 435  
Weed killers, are they dangerous? 72, 134, 234  
Weeks' Horticultural Pocket-book, 8  
Weevils on Pear shoots and Nut leaves, 469  
Welbeck, Palm house at, 462  
Wellingtonia gigantea as a wind tree, 154  
Wellingtonia versus Austrian Pines as wind trees, 192  
Welsh wine, 276  
Westwood, Professor, death of, 8  
White fly on Tomatoes, 18  
White worms in manure, 366  
Whit Monday in London, 416  
Wigtownshire horticulturists, 237  
Witch Hazels, the, 134  
Wolverhampton Gardeners Association, 8  
Wolverhampton Horticultural Society, 156  
Woodford Horticultural Society, 29  
Woodlice, trapping, 186; in Mushroom bed, 326  
Woolton Gardeners' Mutual Improvement Society, 30, 114, 178

YORK FLORISTS', ANCIENT SOCIETY OF, 59  
York Gaia, 507

ZINC FOR PLANT STAGES, CORRUPTED, 62  
Zinnias, double, 203  
Zoospores, 367  
Zygopetalums, 23; Z. Veitchi, 94; hybrid, 376; Z. sedeni, 377

## WOODCUTS.

	PAGE
Aërides Vandarum .. .. .	293
Alocasia Sanderiana var. nobilis .. .. .	439
Apple trees infested with canker .. .. .	115
Arnica montana .. .. .	401
Azalea Anthony Koster .. .. .	317
Bauhinia candida .. .. .	277
Begonia decora .. .. .	201
„ Gloire de Sceaux .. .. .	157
Burchellia capensis .. .. .	381
Caladium Souvenir de Paro .. .. .	257
Calanthe gigas .. .. .	129
Callistachys longifolia .. .. .	142
Calypso borealis .. .. .	331
Camellia sasanqua .. .. .	11
Canker in Apple trees .. .. .	115
Caragana cardinale .. .. .	237
Carnations, hybridising .. .. .	110
Cattleya labiata alba .. .. .	23
Chrysanthemum New Year's Gift .. .. .	137
Cineraria maritima variegata .. .. .	438
Cirrhopetalum picturatum .. .. .	253
Cœlogyne Sanderæ .. .. .	313
Cynoches pentadactylon .. .. .	95
Cymbidium grandiflorum .. .. .	153
Cypripedium conco-Lawre .. .. .	193
„ x Charles Richman .. .. .	517
„ Germinyanum .. .. .	67
„ Johnsonianum .. .. .	171
„ x Penelaus .. .. .	219
Dendrobium thyrsiflorum .. .. .	419
Dracæna Sanderiana .. .. .	389
Embothrium coccineum .. .. .	503
Floors Castle, Grape room at .. .. .	31
Fritillaria tulipifolia .. .. .	411

	PAGE
Gastrolobium villosum .. .. .	79
Gilia Brandegei .. .. .	161
Goodrich Court, Orchid house at .. .. .	53
Grafted Cherry, section of, showing non-union of wood of stock and scion .. .. .	343
Grape room at Floors Castle, a portion of the .. .. .	31
Haberlea rhodopensis .. .. .	507
Hazel-bud gall mite .. .. .	321
Hibbertia perfoliata .. .. .	363
Iris Lorteti .. .. .	485
„ Saari nazarensis .. .. .	373
Lælia hybrida Maynardi .. .. .	473
Lælio-Cattleya Ascania .. .. .	351
Leaf-cutter bee .. .. .	468
Leaf sponger, Atkinson's .. .. .	215
Mangold Wurtzel traps for woodlice and millipedes .. .. .	186
Maxillaria Sanderiana var. xanthoglossa .. .. .	495
Measuring trees .. .. .	189
Millipedes, trapping .. .. .	186
Nectarine tree, dwarf .. .. .	443
Odontoglossum Ruckerianum splendens .. .. .	269
Orange fungus on the Dog Rose .. .. .	481
Orchid house at Goodrich Court .. .. .	53
Palm house at Welbeck .. .. .	461
Phaius amabilis .. .. .	453
„ maculatus .. .. .	397
Platylobium formosum .. .. .	223
Plum tree (Czar) in a pot .. .. .	215
Potatoes, seed and resulting crops .. .. .	181

	PAGE
Portraits—Bishop, Mr. G. A. .. .. .	175
„ Dean, Mr. William .. .. .	477
„ De Candolle, Alphonse .. .. .	297
„ Lyle, Mr. Peter .. .. .	423
„ Mackellar, Mr. A. .. .. .	178
„ Protheroe, Mr. W. H. .. .. .	431
„ Sherwood, Mr. N. .. .. .	7
„ Smith, Mr. E. D. .. .. .	45
Primula calycina .. .. .	301
„ Reidi .. .. .	442
„ rotundifolia .. .. .	527
Psoralea pinnata .. .. .	57
Rhododendron fragrantissimum .. .. .	339
Rose-leaf-cutter bee .. .. .	458
Rose, orange fungus on .. .. .	481
Sandringham, the gardener's cottage at .. .. .	179
Schizocodon soldanelloides .. .. .	281
Scopolia Fladnichiava .. .. .	241
Seakale, raising and blanching .. .. .	181
Sobralia Lucasianum .. .. .	75
Strobilanthes Dyerianus .. .. .	359
Stylophorum diphyllum .. .. .	521
Tomato Lady Bird .. .. .	15
Tinnea æthiopica .. .. .	35
Tree measurer .. .. .	189
Trichoglottis cochlearis .. .. .	233
Urceocharis Cibrani .. .. .	188
Utricularia rhytrophylla .. .. .	261
Waldsteinia trifolia .. .. .	99
Welbeck, Palm house at .. .. .	461
Woodlice traps (Mangold Wurtzel) .. .. .	186
Zygoclox Veitchi .. .. .	87
Zygopetalum Sedeni .. .. .	377





**A**NOTHER year! Ah! how differently, my brothers and sisters of the craft which I think far more deserves the title of "gentle" than that to which old Izaak Walton assigned it I can understand the selfish enjoyment of the angler, for I have fished in my day, and even caught a salmon; but how anyone can call that gentle whose chiefest enjoyment consists in the agonies of an unfortunate fish, and the longer these agonies are prolonged the greater the enjoyment, I cannot understand. What shall we call, then, the craft which has to do with the care and forethought and continued attention which mark the horticulturist? Yes, we are the members of the gentle craft. But let that pass; we are on the threshold of another year, and as we step across it how different are the feelings with which we do so. The young, as they cross over it with firm and elastic step, full of all the possibilities of youth—and to youth everything is possible—see but the brilliant hues of spring and summer. The aged, on whom the experience of life has left its mark, step over with some vague and undefined dread of what may happen; the autumn tints of declining years and the frosted landscape of winter more engage their thoughts. But, alas! I am drifting away into sermonising instead of dealing directly with the subject which should engage my pen—the retrospect of the past year and the prospects of the coming one. I think all who have ever taken the trouble to read what I have written in the *Journal* for so many years (and I believe I am its oldest regular contributor) know that I am no pessimist, that I believe hopefulness is a precious thing, and that, while the experience of many years may sober, it need not darken the prospect, whether we look backward or forward.

In looking back at the conditions of horticulture during the past year we have to, as usual, think of the exhibitions, for it is around them (however much some pessimists may decry them) that the chief interest of those who are interested in the various branches of gardening centres; and as far as the metropolis is concerned the chief event has been the International Horticultural Exhibition; which was so successfully carried out at Earl's Court. As might have been expected, when so accomplished a landscape gardener as Mr. Milner undertook the laying out of the grounds, and Mr. W. Marshall the arrangements of the Shows, a great success was achieved. I think everybody must have been charmed with the laying out of the grounds, while the magnificent exhibitions of flowers, fruit, and vegetables surpassed anything that has been seen in the metropolis for many years. One's memory has to go back to the opening Show, at that ill-starred speculation, the Alexandra Palace, to find a parallel, and that was only a single exhibition, whereas throughout the whole season the ball was kept rolling, and the last was said to be the best of any. I was not able to see them all, but those which I did see were admirable. They required more space, but as a rule the plants showed to great advantage, while every kind of consideration was given to those who, either as exhibitors or judges, were present. There was not a great deal of internationality, it is true—there rarely is; but the presence of many of the most distinguished foreigners from France and Belgium at any rate redeemed its character in this respect. I believe large crowds visited the gardens, but when I hear that Buffalo Bill carried

off £55,000 as his share of the results, I am inclined to think that this was the chief attraction for visitors.

It was probably partly owing to this cause that the Crystal Palace Company dispensed with two of their Shows. There was no summer Show and their great autumn fruit Show was dispensed with. The National Rose Society and the National Dahlia Society held their Exhibitions as usual there, and both were a success, although the Electrical Exhibition sadly interfered with the symmetry of the arrangements. Of the Aquarium I desire to say but little. Of all the miserable places for a flower show that is the worst. The wretched light, especially in November, when the Chrysanthemum Society holds its Exhibition, the disgusting stench of bad tobacco which pervades the atmosphere, and the bellowing of showmen each trying to shout down the others, contrive to make it the least enjoyable place I have ever known for such things. The Royal Botanic Society has also curtailed its Exhibitions.

The Royal Horticultural Society still deserves and receives the support of all that is worth having in the horticultural world with the exception of the attendance of the general public. It is true the Drill Hall is not the most desirable place for a show, but it is the best that the Society can obtain, and I fear the scheme of a grand horticultural hall has collapsed, and this is a reproach on the horticulturists of the kingdom. It only proves what many people have expressed—that London, through its vastness, is about the worst place in which to start anything that has to look for general support. As one goes into that hall on any of the fortnightly meetings, and sees the truly grand displays of the choicest and most novel productions of the best gardens in and around London, and then looks at the handful of visitors who come to see them, one cannot but feel this reproach. There are many Fellows of the Society residing in or near the metropolis, and if only they or some members of their family would attend, although it might not add to the funds of the Society, it would unquestionably minister to the cheerfulness of the meetings. Of the magnificent Exhibition in the Temple Gardens it is superfluous to speak; it equalled, if it did not surpass, its predecessors; and when one recollects that all this grand collection is gathered together without any prize list it speaks volumes for the hold which the R.H.S. has on horticulturists throughout the kingdom, both amateurs and professional, and the confidence which its present management inspires, a confidence mainly owing to the admirable qualities of its Honorary Secretary, who by his courteous manner, good common sense, and thorough business habits has done more to lift the Society out of the slough than anyone else.

In the provinces there have been some changes, the most notable of which was the abandonment for the present year of the great Whitsuntide Exhibition at Manchester. The Botanical Society received a most tempting offer for the use of the Gardens for the summer, and as it would lift them out of many difficulties they accepted it, but I believe that it is the intention of the Council to renew their "suspended animation" this year, and that the Whitsuntide Exhibition of 1893 will equal if not surpass its predecessors. Other provincial societies have had a varied tale to tell, but all bear witness to the increased and increasing interest taken in gardening. It is a pleasing thing to be able to record the ever-increasing love and taste for hardy border flowers and alpinists. People sometimes talk of the old-fashioned flowers, but if anyone takes the trouble of looking through a catalogue of such flowers he will be surprised to find how few, comparatively speaking, of these flowers are found amongst them; for the same zeal which has led collectors to penetrate the virgin forests of South America in search for Orchids, or Borneo for its *Nepenthes*, has led others to the Himalayas, the Caucasus, the Alps, the Carpathians, and other mountain ranges in search of hardy plants, and have for many years been adding gem after gem to our gardens, and also solving many difficulties in their cultivation. There seems to be but little cessation if any in the love—shall I



call it the rage?—for Orchids, the most notable event in connection with which has been the sale of the large collection at Blenheim, of which the death of the Duke of Marlborough caused the dispersion towards the close of the year. It was more remarkable for its extent than for the rarity of the plants, although some fetched high prices, and the whole realised about £5000. But while one grower thus passes out of our view others come in to fill the gap, and there does not seem at present any likelihood of the love for them waning. Many of them are so exquisite for personal and house adornment that in this direction there is an ever-increasing demand.

Amongst other flowers the Chrysanthemum, Begonia, and Dahlia still maintain their popularity, while the Carnation as a border flower has advanced considerably. The new productions in border Carnations, raised by Mr. Martin Smith at home and Mr. Ernest Benary abroad, have enriched us with many beautiful varieties, and I think we may reasonably hope for better things to come. The advance has been most noticeable, especially in the yellow grounds, and those who, like myself, can remember when some half-dozen of these constituted our whole supply, may well be astonished at the wealth of varieties we now possess. The Chrysanthemum, especially the Japanese section, may be said, I think, to be the most popular flower of the day. Easily grown; coming into flower at a time when, except to the comparatively rich, flowers are scarce; accommodating themselves to the back garden of the artisan as well as to the conservatory of the wealthy, it is no wonder that its votaries are so many and their enthusiasm so great; and then so wonderful are its capabilities that we cannot say where we may stop as to either size or colour. Indeed as to the former I fear we are in danger of running into excesses in this matter. When you get a flower like *Etoile de Lyon* some 15 or 18 inches across, one may fairly say that size has been obtained at the expense of refinement.

I fancy there is a lull in the taste for Begonias, except perhaps for bedding out; and in truth it is difficult to see what more remains to be done. In size we have I believe exceeded both in singles and doubles; in fact, I do not see the beauty of these immense flowers. What we do want to see, and what I hope we may get, is a race that will, like the *Gloxinia*, hold itself erect, as does that most exquisite double flower of Cannell's, *Rose-bud*. We have also an amount of striped or flaked flowers, and this will probably make them of increased interest. The lovers of the Dahlia, too, are still energetic in its cultivation, and if the production of novelties does not keep pace with that of former years it is probably from the same cause—that it does not seem likely we can advance much further. There seems to be a limit in these things. The *Show Pelargonium*, the *Fuchsia*, the *Cineraria*, and the *Calceolaria* have passed through these various phases, and now no one looks for any novelties in these flowers. The *Auricula* still maintains its character as the florists' flower of the few, and although there have been additions to the ranks of its growers, especially in the south, they are after all but a handful in comparison with those who cultivate the Rose, or the Chrysanthemum, or the Dahlia. But few additions are made to it, and these additions are but the shadows that flit across us and then vanish away to reappear a dozen years hence. With the exception of selfs we rarely get any that will push the older varieties out of the way. The late Mr. Woodhead's varieties, and two or three of Mr. Simonite's, are desirable; but otherwise the older sorts still hold the fort.

The flowers which have been certificated during the past year have been as numerous, if not more so, than ever; there have been altogether awarded this honour 648. This does not imply that all are new, for we have such plants as *Fritillaria aurea* included amongst them, but in the case of garden varieties it does imply that they are novelties, and it will give some idea in which direction popularity lies when I say that amongst Orchids there have been thirty-eight *Cypripediums* and thirty *Cattleyas*, showing that

these are the two most popular of this gorgeous and beautiful class of plants. Then there have been certificated thirty-nine Begonias, twenty-four Carnations and Picotees, forty-six Chrysanthemums, forty-six Dahlias, twenty Gladioli, and thirteen Roses. We must be prepared to find that the greater number of these have but an ephemeral existence, and perhaps some of them may never be heard of again. I do not think that there has been any such excitement over any new plant as we have witnessed in former years. A good deal of interest was aroused in a flower of the singular *Aristolochia gigas* exhibited at one of the meetings at the Drill Hall, but it is not a new though a most remarkable flower.

The character of the past season must have rather damped the ardour of those who have looked to fruit-growing as the salvation of the British farmer, for it has been of a very varied character; for while in general Plums, Apples, and Pears, and especially the latter, have been a failure, enormous crops have been gathered in some places, and those who have been thus favoured have realised large sums of money. The most valuable event in connection with this was the grand trophy exhibited to the Lord Mayor's Show by the Fruiterers' Company, and arranged by Mr. George Bunyard of Maidstone. It was composed entirely of British-grown fruits, most tastefully arranged, and formed one of the most attractive features of the day.

The Gardeners' Guild has evinced new symptoms of life, and is diligently aiding in the general attention given to horticulture, while the two societies which are intended to help the aged and the orphan, the Gardeners' Royal Benevolent Institution and the Gardeners' Orphan Fund, are in a very satisfactory condition. The Horticultural Club, too, which for eighteen years has played a not unimportant part in bringing together into social contact all classes of horticulturists, also had a prosperous year. Its meetings have been well attended, and its advantages much appreciated.

And now I come to what is ever a sad thing, to call over the death roll and see who have dropped out of our company during the past year. While many good and excellent men have passed away, many of whom have been much valued amongst a limited class, there has been no very prominent name removed from amongst us. To me, the greatest blank is that left by my old friend Margottin père of Bourg la Reine, near Paris. He was my first Rose acquaintance abroad some nearly forty years ago, and I ever retained a great regard for the honest man that he was. He had raised some good Roses in his time, and although many of them have passed out of cultivation as exhibition varieties, Jules Margottin and others will, I think, long retain their position as garden Roses. His two latest additions, *Gloire de Bourg la Reine* and *Gloire de Margottin*, are two of the most brilliant flowers we have, and if not up to the front rank as exhibition Roses, will be very valuable ones for the garden. He was just my own age, and many a pleasant chat have I had with my old friend, and it is somewhat curious that when I had definitely determined that I would not again cross the Channel he should have passed away. Another name associated with my early gardening reminiscences was Ambrose Balfe, who died just at the close of last year, and who for a long period had been the admirable Secretary of the Royal Horticultural Society of Ireland. In Mr. W. H. Fitch, whose personal acquaintance I did not enjoy, has passed away one who, as a botanical artist, was long employed on Curtis' "Botanical Magazine." Many will miss the cheery countenance and pleasant words of Mr. John Matthews, the well-known manufacturer of garden pottery at Weston-super-Mare, although of late years increasing ill health has precluded him from joining in those meetings of horticulturists which he used to delight in attending.

In garden literature there has been no change, the weekly journals devoted to the calling keep on their way, and I think we of the JOURNAL may safely congratulate "our revered chief" on the continued vigour which has characterised it. Long may he



guide his vessel over the shoals and rocks that beset the course even of the peaceful and peace-loving Journal.

Such, then, is a brief sketch of the past season in its horticultural aspect as it has appeared to me, and now we look hopefully on. We cannot tell what the horticultural record of 1893 may be, any more than any other record of the future; but there is no diminution of the zeal with which the art is followed. Already we have the bugle call to make ready, and with the prospects held out to us in and about London it does not seem that there will be any falling off in interest.

I feel that it is not likely to be for long that I shall be able to perform the pleasant duty I have now fulfilled, and, therefore, let me with all good feeling wish you, my brothers and sisters, an old man's blessing in the opening year, and that amongst the many shifting scenes that lie before you, you may experience in your gardens as I have often done a happy enjoyment of God's works, leading you on to the thoughts of a better garden, which He has used to symbolise the pure and eternal blessedness of His kingdom.—D., Deal.

## "I WISH YOU A HAPPY NEW YEAR!"

### A POTATO-RAISING EXPERIENCE.

THE words above quoted greeted me several times this morning on my circuit as road surveyor, and as I repeat them in writing I wish them from my heart to our Editors and their readers. I have done so for many years, and it is nothing new, though it has never been a rule with me to rush into your pages without I think I have something new to say. Well, on January 5th, 1876, the well-known botanist from "the other side," Mr. C. G. Pringle, in a correspondence treating on hybridisation, wrote me from Charlotte, Vermont, U.S.A., "Besides the original species from the sides of the Andes, *Solanum tuberosum*, I cultivate one very distinct from our western territory of New Mexico, *S. Fendleri*. All my pains taken to impregnate it with pollen of the cultivated species has proved unavailing, though partially developed fruits have followed my operations, only to fall away, however, before maturity." On the following April Mr. Pringle sent me a tuber of his Snowflake, "and in a small tin box to go by sample post with this I send you three little tubers of *S. Fendleri*, which, though very small, are nearly of average size."

Probably Mr. Pringle sent me the wild Mexican (named after Fendler, the great traveller I presumed) to try my mettle, and it did, for both at Woodstock, and since here at Sulhamsted, till 1888 it defied all my pains to become impregnated with our cultivated sorts. In 1888 the pollen of my seedling Antagonist (now Sir Charles Douglas) came to the rescue. I had operated successfully with its pollen on some of Messrs. Suttons' wild varieties at their trial grounds, and upon several shy setters of my own seedlings effectually; then *S. Fendleri* became attacked as a forlorn hope—Antagonist's potent pollen conquered. In a few days after its application, to my great satisfaction, two berries began to show signs of swelling, and so on till one fell off prematurely; the other maintained itself till nearly ripe, and down it fell.

This precious production I conveyed at once from the seedling Potato trough, in the vinery *pro tem.*, to the missus's best glass cupboard for security (?), carefully placing it in a tumbler; and I must confess I forgot all about it, till soon after I found there had been a "cleaning up," and the "helper" had been set to dust out the glass cupboard and replace the glasses. "Dusting the glasses! Where's the Potato berry?" No one knew of it; no one had seen it. Well, the glasses were peeped into, the carpet retaken up, and the room reswept—no berry. *Exit omnes.* A very severe and early frost came, and turned all the tubers—of sorts precious that I had left undisturbed in the seedling trough—into pulp. Gone, *Fendleri*!

Four more years are gone, and then another up-to-date "cleaning" was being transacted in the past spring-time, in the midst of which my wife came rushing into the garden in hilarious pantomime, dancing a glass tumbler about in her hand, exclaiming, "Look here, father! Here is the Potato berry that Mrs. Woof lost!" Yes! Where did you find it?" "At the back corner of the cupboard." "Well, to be sure. Then we may say, 'all is not lost that is delayed.' So as you have had plenty of experience in manipulating the seed from the pulp you had better now try and dissect this dried up mummy, to find out if there is any seed within it that is likely to germinate." There were thirteen almost microscopic productions. Somebody's soap-box became filled with

drainage and fine soil; the seeds sown, and pieces of Rye Grass stalks as tallies, placed by each seed. Alas! in moving the box to a more convenient place, out went the bottom; and the contents lain all a sprawl on the vinery floor. I wish I could have had at command some wise proverb suitable for the occasion. . . . Suffice it to say, I had a shallow parallelogram box, erst used for raising Celery placed on the floor at hand. This I had got ready for Alice to sow with some choice flower seeds, so on to it at once I distributed the soil containing the precious Potato seeds. You may fancy I know a Potato's infantile appearance, and you can fancy how anxiously in this instance we watched for the appearance of these I am now writing about.

In due time three emerged for the light of day, but mysteriously disappeared in the night, as did others of them consecutively. A lanthorn and candle then discovered woodlice to be the cause. They had formed a lodgment at the bottom of the wooden box, and could not now be dislodged on account of disturbing the few remaining seeds which might be germinating. "The misfortunes of Nigel," and "The troubles of Werther," were out of the running; but I kept a strict watch now, and had the good fortune to secure two seedlings to become transplanted into small pots, as soon as I could perceive the cotyledons, and to be kept well out of the way of the depredators.

Of course the infants did not relish their being so early transplanted; in fact, one of them soon succumbed, and I believe so would the other had I not, as luck would have it, been showing to a friend the qualities pertaining to Tait & Buchanan's anti-blight powder, and the action of the Malbec bellows for its application. My friend said, "And what have you got here?" "Oh, the only Potato plant of its kind in existence, and that won't be for long by the look of it." I contemptuously gave it a puff of powder from the bellows as I said so, and from that time the little invalid revived into greenness, and grew away as much as it could until it ripened itself off. I conclude from this that the powder would prove a good antidote for sickly plants, and I feel sure all young foliage would be nourished by it, and the older foliage maintained in greenery. Chrysanthemums, &c., which are apt to become "leggy" would hold their foliage to the last, to the verge of the pot. But this in a parenthesis. Of course I summoned my wife to the digging, or rather the reversion of the pot, and behold the crop. The labour and the anxiety for which it has taken me, along with the above mishaps, seventeen years to accomplish—two ridiculously diminutive spherical white tubers about the size of small peas attached to the ends of abnormally long feelers, fine as the hair of one's head. What do you think of this, you raisers of Elephants, Giants, and Colosseans? Isn't it a "big thing" for England to have beaten America?—ROBT. FENN.

[Yes, and is it not a good thing when "helpers" clean out cupboards to look well into the corners? and does anti-blight contribute to the perennial greenery of our respected old friend and enable him to bear his Potato troubles so lightly? He is determined to be up to date, even in the missing word modernity. We have had a sight of the diminutive tubers, and we hope their triumphant raiser will in due time report progress with them—including accidents. This and the preceding article are written by our oldest correspondents— hale and active septuagenarians. A Happy New Year to them!]

### NEW RICHARDIAS.

A GREAT deal of what is being said and written in regard to the yellow and other "new" Richardias (Callas) is mere guesswork, or something worse. In horticulture, as in everything else, it is risky to jump to hasty conclusions, or, as the Yankees say, "to prophesy before you know." I am afraid "Boscobel" is one of the principal offenders in this respect. He began by stating that *R. Elliottiana* was a hybrid between *R. æthiopica* and *R. hastata*, and when asked for his authority said he guessed it. Then he produced the "unsolicited testimony of a careful and accurate observer and grower of a large collection (?) of these plants" to prove that his guess was correct. In the same communication he covertly admitted that *R. Elliottiana* comes true from seed. Now all this I shall venture to call the merest twaddle. Mr. N. E. Brown of Kew, who knows more about Aroideæ than any living botanist, says of *R. Elliottiana*, after having seen it at one of the exhibitions, that it is no doubt a distinct species. The fact that it comes true from seeds bears out this view, as no true hybrid reproduces itself from seeds. Had *R. Elliottiana* been a hybrid then "Boscobel's" expectation that "a large proportion of the seedlings may be expected to revert to one or other of the parents" would have been reasonable.

*R. aurata* is advertised with a great flourish of trumpets by a French nurseryman, M. Deleuil of Marseilles, who says he

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obtained it by crossing *R. albo-maculata* and *R. hastata*. He quotes the notices of *R. Elliottiana*, and then states that "un Anglais bien connu" who saw his hybrid in flower said it was identical with Captain Elliott's plant. I am told that this "well-known Englishman" is a young lady from Kensington. It is possible that M. Deleuil's plant is all that he says it is, but he is certainly unwarranted in declaring it to be the same as *R. Elliottiana* on the mere testimony of a young lady. I venture to advise would-be possessors of the yellow *Richardia Elliottii* to be careful of hasty conclusions, and to remember the consequences of "buying pigs in pokes." If M. Deleuil's plant is so good how is it that we never heard of it until he had a quantity of large tubers of it for sale? Has any known horticulturist seen it?

"Boscobel" thinks Deleuil's plant will probably turn out to be "either identical with *C. Elliottiana* or will closely resemble it." What has become of the belief that the latter was a hybrid between *R. hastata* and *R. africana* (*æthiopica*)? Then "Boscobel" attacks *R. Pentlandii*; he says, "undoubtedly its true and correct designation should be *C. æthiopica aurea*, as it is admitted by all who have seen it to be merely a very fine bright golden form of the type." Permit me to say that after having carefully examined *R. Pentlandii*, and ascertaining its history, I feel quite certain that it has nothing whatever to do with *R. africana* (*æthiopica*) beyond belonging to the same genus. I cannot understand how even "Boscobel" can be so venturesome as to say "that the plants recently sold by auction as 'Pride of the Congo' will prove to be what is known as *R. Pentlandiana*." I call this kind of jumping "flat burglary." Possibly such a guess may prove the correct card, but at present it is worth nothing to anyone except, perhaps, "Boscobel" and the vendor of "Pride of the Congo."

This is briefly how we stand with regard to the genus *Richardia*. There are five good properly described species in cultivation, namely—*R. africana*, spathes white; *R. albo-maculata*, spathes creamy white with a purplish blotch at the base, the leaves being spotted with white; *R. hastata*, spathes dull yellow with a blotch of crimson at the base, leaves unspotted; *R. melanoleuca*, spathes rather small, not folded trumpet-like, pale yellow, purple at the base, leaves spotted; this species differs from *R. albo-maculata* in having shorter leafstalks with a few setiferous hairs at the base. *R. Rehmanni* has small white spathes in form like those of *R. africana*, and lanceolate instead of hastate leaves. In addition to these we have the new ones, namely—*R. Elliottiana*, raised from seeds imported from Africa six years ago as "Red Arums." I am informed that the Kaffirs have only one word for red and yellow. If this is correct we have the seeming mistake explained. It was shown at a meeting of the R.H.S. in the spring of 1890 and again in 1891 and 1892. It reproduces itself from seeds. The plants were distributed by auction sale in June last. It has hastate spotted leaves and large clear yellow spathes.

*R. Pentlandii* was flowered this year by Mr. Whyte, who obtained it from a tuber presented to him along with five others. It is a very handsome plant, distinct from and superior to *R. Elliottiana*, equalling almost in stature and size of spathes the common *Arum Lily*. It differs from this species, however, in the texture of its leaves, in the colour of its spathes, and in its truly deciduous habit of growth, *R. africana* not being really deciduous. *R. aurata* I have already dealt with; its spathes have not been seen, except in M. Deleuil's nursery. "*Calla nilotica*" is advertised as having white and red spathes, and as having been collected on the banks of the Nile; and "Pride of the Congo" I suppose we are to believe comes from the region of the Congo. I know nothing of these two plants, and the only criticism I shall offer with regard to them is this. *Richardias* are all natives of South Africa; at any rate, no plants have yet been found north of the Transvaal. I therefore venture to doubt what the namer of these two plants would have us believe—i.e., that one is from the Congo, and the other from the Nile. The popular name for *R. africana*—viz., "Lily of the Nile"—is misleading, this species not occurring wild within 1000 miles or so of the Nile. It is a native of the Cape.

It is evident, I think, from what I have shown that some of us are a little mixed with regard to these plants.—W.

### TOMATOES AND MUSHROOMS.

I WAS very much interested in a communication which appeared in the Journal a few weeks ago (page 478, December 1st, 1892) from Mr. Buchanan, respecting "Tomatoes and Mushrooms." He said: "We took out two trenches 1 foot deep and 1 foot broad in the spring, spread in a small quantity of old Mushroom bed, planted the Tomatoes in rows in the usual way, giving round each plant a good dressing of the fertiliser, Thomson's manure. The result has been good crops of Tomatoes and as fine Mushrooms as ever were grown."

According to this statement, the border was spawned simply by using a small quantity of old Mushroom bed, no other manure being used

except the dressings referred to. Now I should like to know whether the insertion of the ordinary brick spawn would have an equally good if not better effect in producing Mushrooms, using, of course, Thomson's manure in the way Mr. B. recommends; because if so it would be a very useful way of raising Mushrooms without the agency of horse manure, which, with those who do not keep horses, is somewhat difficult to obtain of the right character for that purpose.

As Mr. Buchanan made his border up in spring, it would appear as if the spawn was somewhat slow in permeating the soil, as he did not begin to gather Mushrooms till August. I suppose this would be partly accounted for by the layer of old Mushroom bed being placed at the bottom of the trenches 1 foot deep. Moreover, the temperature of the border would, I presume, have something to do with retarding their appearance. Will Mr. Buchanan or other readers oblige with opinions and suggestions?—J. F. CRANSWICK.



### THE NATIONAL ROSE SOCIETY.

THE annual general meeting of the Society was well attended, and got through a good amount of business, one important reform being carried, and two others lost. It is, I take it, a healthy sign of vigorous life that these meetings are now occasions for debate and decision on important points as well as for mere matters of routine, and now that this is so, such a capable Chairman as Mr. Wilks was a distinct boon to the progress of business. The report speaks of the Crystal Palace Show as the largest the Society has ever held, and "E. M." and Mr. Grahame have told us in the Journal "what a success" it was. No doubt they are right if success depends entirely upon the number of classes and entries; but I should have thought smoothness of arrangement and quality of exhibits were also necessary elements in the making of a successful show; and, beside the generally lamented absence of fourth prizes, it seems to me that it would be possible to find something wanting in these particulars.

### SPACE FOR EXHIBITORS.

It is a busy time that two or three hours of setting up before judging; and if anyone is showing in several classes, with a good many large boxes requiring two persons to carry them (and thereby contributing, I suppose, to the success of the show), it is very difficult to arrange them unless he has all his boxes together in one of those charming side spots with which the Palace abounds. It is, moreover, very trying, when all at last is ready, to find there is no room to be had in those classes where entry has been duly made some days before. 1892 is not the first year that the boxes of myself and others have had to go on the floor, or be piled up somewhere where they could not be seen; and I would simply like to ask whether the management would not hear of it, if this was to occur at a small provincial show.

At my own little cottagers' vegetable show, I should be ashamed if the labourer who had paid his pence and made his entry had not room provided for his Potatoes and other produce; and when all entries are rigorously made several days beforehand, I cannot see what is the difficulty in providing sufficient space. I am told the C.P. authorities were to blame, and I make my grumble, hoping it will reach them, for there was certainly a want of "success" in this matter. I am getting too old to fight for a place myself, and, having lost my assistant, fear I shall have to drop out in favour of more vigorous members; but I should be very glad to see the N.R.S. set a good example instead of a bad one in this important respect to country shows.

The financial statement could hardly be called very flourishing, and the complaint of the Treasurer as to the difficulty of getting members to pay their subscriptions is much to be regretted. I think the recommendation of the Society that all members should as far as possible give orders to their bankers to make these payments should be more strongly urged and that this would have a good effect in punctuality and the saving of labour.

I much regret that it has been found impracticable to arrange for the holding of the Provincial Show in East Anglia. This portion of the kingdom has, on all accounts, a strong claim for consideration in the matter; but, alas! we have no money, and must go north, "where money is."

The important question of the date of the Metropolitan Show was again fully debated, and now that it is settled for the year it may not be desirable to reopen it at present. Perhaps I do not look upon the question impartially, but it seemed to me that the arguments of the opponents of Mr. Pemberton's motion consisted principally of "I should not be able to show at my best," while his supporters were so full of argument of all sorts that the time would not suffice for them. A notable division of opinion on the matter exists throughout the Society; opposite sides are taken by my neighbour, whose portrait



appeared on page 555, and myself, by Messrs. Grahame and Bateman, who, as leading "metropolitan members," might be expected to think alike, by the two Secretaries of the Society, and in one rosarian household by husband and wife!

The appointment of one Committee instead of two, with power to appoint sub-committees for special purposes, is a useful reform, and found general favour.

#### THE PROXY QUESTION.

The suggestion that members should be allowed to vote by proxy seemed so extremely reasonable that I was surprised at its rejection. I heard no argument whatever against it, except that it would be more trouble to the Secretaries, and I feel sure that with judicious management this might be reduced to a minimum. Either on this question, or that of the date, someone read from the list the comparatively small number of northern members, showing them to be very much in the minority. This was apparently meant to prove that their claims might be disregarded; but, apart from the question of the "rights of a minority," it might well have been argued that the number of northern members is so small *because* their privileges in the matter of voting at the general meeting and exhibiting at the National Show are so limited. I think that those who last year agitated with success for justice to small growers should have seen that northern members have not justice till they have the power of voting by proxy. Many thanks are due from rosarians at a distance to Mr. Grahame, who did see this and ably seconded the proposal, and I hope—for the motion will surely come on again till it does pass—that all other "metropolitan members," as those within easy reach of London may be called by way of distinction, will see before next year that justice calls for this reform, and that in the interests of the *National Rose Society* it is as desirable to give fair play to the members at a distance as it was to the small growers.

#### THE MEDAL HYBRID PERPETUAL ROSE.

I was unable to take a full view of the Show, but should have said, from the classes which I assisted in judging, that the standard was below the average, though not so low as it has been. A circumstance occurred, however, which reconciled me to not having seen a good many of the stands, and made me think the general standard of H.P.'s must be lower than it had ever been before. This was the selection of a certain *Gustave Piganeau*, in a box which I had been helping to judge, as the nurserymen's medal H.P.—a bloom which, though good (not extra) in other respects, had a distinctly split centre. On my remonstrating, the medal judge (wild horses shall not drag his name from me!) said it was a case of either that bloom or withholding the medal, and I advised, if that was so, the latter alternative, though I admit it was not my business. If that was the best Rose, according to the rules, the standard of nurserymen's H.P.'s must have been very low indeed. The task of picking out the four best Roses in a show of 7100 blooms must be a very arduous one, and it is satisfactory that Mr. Burnside's proposition (anticipated by Mr. Shanks), which will very much lessen this labour, and we may hope render it less open to detraction, was carried by a considerable majority. From an exhibitor's point of view, the selection of the medal Roses at the Crystal Palace Show is a matter of great importance. They represent the standards of excellence by which all judging should be measured; and we all welcome any help towards making the choice as accurate as possible.—W. R. RAILLEM.

#### NATIONAL ROSE SOCIETY—VOTE BY PROXY.

I AM inclined to join in Mr. Gall's regret, that Mr. Foster Melliar's proposal to allow voting by proxy (I presume at the general meeting) was negatived. As a general rule, no doubt, people ought to hear the discussion before they make up their minds. But I believe it is very doubtful whether many votes are influenced in this way in the highest of all assemblies of deliberation—the English House of Commons. It would probably lead to a more general interest in the proceedings of the Society. At the same time, the tendency of late years has been rather to disallow proxies. That epigram no longer applied to the House of Lords:—

"By proxy I pray, and by proxy I vote!"  
A graceless peer said to a churchman of note,  
Who answered, "My lord, then I'll venture to say  
You'll to heaven ascend in a similar way!"

—A. C.

#### DISCUSSION ON POTATOES.

APPLES have a good, but not too good, share of attention. Cannot we also have a discussion on the *Pomme de Terre*? Potatoes and Peas have ever had a fascination for me. They are my favourite vegetables to grow and to eat, and I am not very easily satisfied with them, for there are Potatoes and—Potatoes. A variety which I have grown for two seasons is my first favourite for the table, and it has been so very highly fancied by my family that many of the seed tubers have been sacrificed to our appetite. The variety I mean is *Laxton's Reward*. In an evil hour I dug up a few roots when the haulm was yet green, and we had the produce for dinner, and the consequence was no other Potato would suit, so I supplied them as long as I could, and have left myself a scanty supply for seed. It is not a white-fleshed Potato, but has a yellowish tinge. It is very floury, but does not break; medium sized, and nearly all the tubers of a size. It is a rather strong grower and good cropper. Those who appreciate a really high-class Potato will be pleased with

this. "Early Laxton" is a round dwarf-topped companion to *Sharpe's Victor*. They are very similar in haulm, and with me ripened at the same time. No better Potatoes for early work could be grown, and they are especially suitable for frames, owing to their dwarf growth. *Vilmorin's "Eiffel"* turned out to be a heavy cropping midseason variety, with which I was well satisfied. *Early Puritan* is useful, and I think an improvement on *Beauty of Hebron*, and certainly more saleable on account of colour of the skin. *Bedfordshire Hero* is a remarkably heavy cropping kidney, and the quality is good. It is profitable to grow, for it can be dug before the disease appears, and there are no small tubers. The General is a late Potato, and takes a long time in ripening; is a strong grower and good cropper. It is a white floury Potato, and I should judge will be good for spring use, being close in the grain and heavy—two essentials for a keeping sort.—H. S. EASTY.

I TRIED some of the new Potatoes the other day. *Her Majesty* is a very heavy cropper, and good in quality; *Lady Francis* is exceptionally good, and a free cropper; *Astonishment*, a very heavy cropper, but very poor quality; *Lady Fife*, excellent both in quality and yield. I think "*Jeanie Deans*" is one of the best Potatoes sent out for many years; the quality is first-rate, and the crop was heavy. A large field of them in Lincolnshire was a sight to remember.—H. H.

#### PRICES OF APPLES—STRAWBERRIES.

I AM glad that we have at last found out (page 542 last volume) the price of the *Domino Apples*. At first stated at 6s. a bushel by "W. P. W." it fell in his next letter to 4s. 6d., and in the last it appears that this was the market price, and that after deducting expenses at about 1s. 3d. per bushel, the nett price home is only 3s. 3d. or about half the first statement of "W. P. W." From this price, of course, the cost of production and gathering must be deducted. As we agree that "my object in writing in the first place was simply in order that readers of your Journal should not be misled by seeing 6s. a bushel stated as the price of Apples when the average price home to the grower has been much less," I think your readers will admit that I have gained my object.

I am sorry that "W. P. W." has endeavoured to draw attention from the main issue in order to try to get the best of the argument by side winds, and that he should write in the style that he did in his last. Artificial heat may be very useful for greenhouses, but is not required for Apples nor for discussing their prices. What "W. P. W." lacks in argument he makes up in "wordiness," taking up nearly a page of your paper to get out of it neatly, and to cover up his retreating footsteps after again letting the price down.

Ridicule may be an easy way of turning the subject or of beclouding it, but it is hardly necessary to say that it is not argument, neither will it advance the price of *Domino Apples*. If so, "W. P. W." would be able to sell to advantage.

And now to turn to the side issues. I have not time to enter into the price of the other varieties at 6s. a bushel. If I did probably they would melt away like that of the *Domino*, for I know what the price of Apples has been in the principal markets, and it is not likely that a grower would market all his Apples in several varieties, especially if there was a large bulk of them at just the time when prices were highest.

As regards my expenditure of £1200 a year for labour and manure (which "W. P. W." exaggerates to £1500), of course I could drop the manure; but probably I may be allowed to know my own business best. My aim is to crop heavily, and this cannot be done without manuring heavily. I not only plant my trees, but crop the spaces between with Strawberries, Potatoes, and other things, and it is the Strawberries that have paid most of the outlay, not Apples.

I must decline to write any further on the subject of the price of Apples, as I think sufficient has been said, unless "W. P. W." has another reduction to make in the price of *Domino*. I must also thank the Editor for having permitted such a full correspondence.

To pass now to the subject of fruit tree planting. Though "W. P. W." assumes that I wish to deter others from entering the same business as myself, I may inform your readers that Strawberries have been my sheet-anchor. About a half-plant crop on half my ground produced in 1891 £750 worth of fruit. It is only fair to add that this year the produce off the same ground was only £250, and also that I often made 4s. a peck in distant markets when the price other growers received in the same markets was only 2s. 6d. per peck of 12 lbs. The expenses are heavy, as I indicated in my last.

The advice I would give intending planters is, that all sorts of hardy fruits should be planted; not merely Apples, for according to my experience all in turn are profitable, and in like manner there are gluts of all occasionally, and low prices. The latter is in consequence of the former, for as soon as one crop shows up better than the rest such is planted so extensively that in a few years there is a glut. Fortunately the consumption of fruit has increased and is still increasing. It should, however, be borne in mind that, taking one season with another, the planter of a few acres must not expect a very large income, while anyone who goes in for planting a large acreage will (notwithstanding "W. P. W." and his ridicule of capital) find he has tackled a "big job," both as regards the expense of planting fruit trees and bush fruits, and also in cultivating them till they come into full bearing. On the whole the Strawberry may be recommended as the fruit which requires the least expenditure for planting, and brings the quickest and largest



returns, and there is practically no competition on account of the perishable nature of the fruit.—WALTER KRUSE.

LIVING as I do in a purely agricultural district some distance from a town, and having some experience of growing and selling Apples, the few remarks I am going to make on this subject may be worth noting. I have abundant opportunities of judging the difference between good and bad varieties, also good and bad fruit. In my neighbourhood there are an abundance of local sorts, but very few of the modern good varieties. While the locals were selling at 2s. and 3s. per bushel, I was selling to the same dealers Lord Grosvenor and Warner's King at 6s. per bushel. Worcester Pearmain and Lady Sudeley fetched 7s. per bushel, and I could not get nearly enough for the demand. Later on Cox's Orange Pippin realised 10s. without any trouble. Altogether I have sold between 70 and 80 bushels of surplus fruit, including a goodly number of windfalls; the average for the whole being 5s. 5d. per bushel. Surely, now, this is a remunerative price, obtained purely by reason of two things—good varieties and superior fruit. One tree of Ecklinville, thirteen years planted, yielded 6 bushels, sold to a higgler for 30s. on the tree; he expected to make 1s. profit per bushel when taken to the neighbouring town. Why was such a price obtained? Simply on account of the sort being a superior one—good fruit will sell; bad will not.—A YORKSHIREMAN.

RELATIVE to what has been said on this subject, the fact remains that well-grown and well-marketed home-grown fruit will and does realise more than your Kentish correspondent obtains for his (pages 478 and 532, last volume). There may possibly be something wrong in the staple of his soil, as he appears to cultivate well. Many soils are too light for the production of first quality Apples. I have sold no Apples for less than 6s. a bushel from the trees. Ecklinvilles, New Hawthorndens, Stirling Castle, and Blenheims sold readily at those prices. Earlier gatherings, including Lord Grosvenor, were sold from 6s. 6d. to 7s. 6d.; Worcester Pearmain, 8s.; Cox's Orange Pippin, 9s. and 10s. a bushel. The soil is a clayey marl. The trees are from six to twelve years old, the branches very thinly disposed, and the crop was quite as heavy as it should be; if much heavier the fruit would have been smaller, and its market value perhaps 3s. or 4s. a bushel.—A SUSSEX GROWER.

#### MR. J. MCINDOE AND THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

MR. MCINDOE seems dissatisfied with the so-called high-handed rejection of his entries from the autumn Show of the Society at Edinburgh. Had the complaints been lodged in a proper manner with the managers of the Show, instead of his rushing to the Press, any reasonable complaint would have been entertained and the alleged grievance searched out and reported upon.—A. M., Bristol.

[Our correspondent sends his name and address, but as he has not consented to their publication a great deal of his matter, which contains a grave allegation, has been necessarily expunged.]

As Mr. McIndoe has initiated a discussion on this very important subject of refusing entries at Edinburgh himself, he cannot complain if readers of the *Journal of Horticulture* should ask whether there were other reasons for the refusal of the Committee of the R.C.H. Society than those Mr. McIndoe gives. I put this view of the case forward, not for one moment in the belief that Mr. McIndoe has not told all, but because the Committee, in refusing so distinguished a gardener and exhibitor a reply, rather implies in its action that there is another reason, but declines to state for fear of a libel action, or something of that sort. If the Committee have no other reason for declining Mr. McIndoe's entries than those which he has given they lead the world to assume that they have reasons which signify criminality. It is a case that demands the interposition of a court of law or some other court, and Mr. McIndoe ought to have legal right to force the Edinburgh Committee to state their reasons publicly. Mr. McIndoe's charges against the Committee, practically of neglect to check stealing of fruit at their shows, is one which that body must in all honesty openly and fairly meet. It is not only a severe reflection on the Committee, but also on the Edinburgh public. Happily, this sort of thing is rare in London, and I believe there is no executive but would be only too ready to co-operate with exhibitors in repressing it. It is high time the Edinburgh Committee made a public reply to Mr. McIndoe's charges.—D.

THE habit of pilfering at shows leads to much annoyance, and ought wherever it exists to be ruthlessly put down. In many instances, when a gardener procures prizes for his exhibits, the owner of the produce very naturally often requires to see it on his own table, otherwise to send away to friends. Then what is to be done when it has been stolen during the Exhibition? Anyone showing does not wish to be compelled to stay by the side of his exhibits all the time the show is open.—G. F., Trafalgar.

#### MANURING FRUIT TREES.

IN your issue of 8th ult. "W. P. W." wrote a long homily upon the folly of "old world" fruit growers and their antiquated methods of culture. I ventured on page 452 to ask your correspondent a definite question, and received a very indefinite answer. My inquiry related to

the actual cost of manuring certain trees, as recommended by "W. P. W.," to which he replied by kindly giving directions respecting the quantity of stimulants required for trees. Verily a crooked answer to a simple and straightforward question. So loose a way of writing does much harm, for it checks progress. What on earth is the good of talking airily about "timely top-dressings" just as if superphosphates, nitrates, and kainit dropped from the clouds like manna in the wilderness? Not only are the fertilisers he mentions expensive to buy, but they are heavy, therefore still more expensive to transport from the dealer's stores to any but a few favourably situated orchards. Consequently "W. P. W.'s" fencing with my plain practical question of cost considerably discounts the value of the lesson he seeks to inculcate.—B. D. K.

[The above letter has been placed in the hands of our correspondent for his reply, which is as follows:—"B. D. K." desired to know the "cost per tree of a dressing of kainit and superphosphate spread from the stem outwards and a light sprinkling of nitrate of soda to follow." I agree that "loose methods of writing check progress," and this is a case in point. I do not hesitate saying, and I speak before the world, that there is not a practical fruit grower in the kingdom who could give a categorical reply to a question so vague as the one quoted that would be worth printing. I therefore did the best I could, as precisely and concisely as possible, to give a reply that might be useful to "B. D. K." and others, by indicating the quantity of the manures named per square yard to trees that did not make sufficient growth. I had in view just what "D. B. K." points out as to variations in cost of transport of manures "from dealers' stores to orchards." How was I to know whether your correspondent resides near any such stores or ten or twenty miles from them, or from a railway station? Again, how was I to know whether his trees were large or small, whether the roots occupied an area as represented superficially by 3 or 4 square yards, as is the case with thousands, or of 20 to 40 square yards with thousands more?

I assumed that anyone knew, or could obtain from his nearest manure dealer, the exact cost per cwt. of the different manures delivered at the place required; then by noting the size of tree—the rooting area as indicated by the branch growth, he could easily arrive at the exact "cost per tree" to himself (not to others differently circumstanced) on the basis of the quantities named for application.

Then comes another important element in the case—indeed, a vital one in determining the "cost of manure per tree." If "B. D. K.'s" orchards are extensive and he desires to purchase what he wants by the ton direct from manure works, the cost home will be infinitely less than if he wishes to buy locally by the cwt., or even in 2 lb. canisters. How was anyone to know by reading his "simple question" whether the querist is a ton man, a cwt. man, or a canister man? If the latter, the "cost per tree" will be 50 per cent. more than under the ton rate.

Your correspondent goes on to object that the measures named are "expensive." Very well; knowing so much, he may be expected to know the exact cost to himself. If he will be so good as to state what they cost him, and also state the height of one of his trees as well as its diameter through the head—the spread of the branches—I will then with very much pleasure tell him the cost of manuring such tree on the rates of application advised—first, for trees that make moderate but not sufficient growth; second, for restoring old or nearly exhausted trees.

Relative to the costliness of the manures named, the two of mineral character are, with one exception (basic slag), the least costly of all. Nitrate of soda, considering its action and the small quantity required, is as cheap as any nitrogenous fertiliser that can be obtained. The proper and intelligent application of manures is an investment, and a profitable one, as all the best cultivators in fields, farms, gardens, and orchards know full well; but not one of these could answer what "B. D. K." calls first his "definite," then his "simple," and next his "straightforward" question.

He is entitled to his own description and I am entitled to mine—namely, the question is one of the vaguest that ever was printed; yet I made an honest attempt to show how your correspondent could acquire the information he appeared to desire. I am snubbed for my pains, but that does not matter in the least. I will conclude by asking "B. D. K." a question just as easy to answer categorically and correctly as was his question to me, and he will then perhaps appreciate the nature of his puzzle. My question is equally definite, simple, and straightforward as the one I had to deal with—How much will it cost to make John Smith a suit of clothes? Whether John is a boy (like a small tree) or a man (like a large tree), or whether he wants lightly dressing (summer) or heavily dressing (winter) is for my chastiser to determine. It is an "airy" question I know, as it must be to run parallel with that of "B. D. K.," which may be fairly rendered, "How much will it cost to manure a tree?"—W. P. W.

#### MAINDIFF COURT.

THIS, the residence of the late Crawshaw Bailey, Esq., is situated about one mile from the town of Abergavenny. The view from the terraces on two sides of the mansion is magnificent. Far away stretch the peaks of lofty mountains, rising one above another, while below lies the pretty town of Abergavenny. The sides of a serpentine drive approaching the mansion are planted with Cedrus Deodara, which grow well considering the exposed position. The grounds and gardens are 21 acres in extent, and are laid out in a charming manner. Many beds are planted with hybrid and named Rhododendrons, all of which do well



and produce a wealth of bloom in their season. At intervals specimens of choice Conifers are planted, and these by annual top-dressing are kept in fine health. The shrubberies abound with all kinds of the choicest evergreen Conifera and flowering shrubs.

The Rose garden is close to the mansion, and the beds are planted with all the choicest varieties. Gladioli are also planted in the beds, these producing a good display when the Roses are past their best. Mignonette is grown round the single standard Roses. The flower garden is on the west side of the mansion, and during the summer is planted with choice bedding plants, which produce a charming effect.

The conservatory adjoins the house, and is a large roomy structure. Inside I noticed some grand specimens of Azaleas in variety 6 feet through, and a mass of bloom. Huge Palms, including *Latania borbonica*, *Seaforthia elegans*, and *Phoenix* in variety were also noticeable, likewise *Aralia Chabrieri* and *Araucaria excelsa* in good health. There are many fine Camellias, *Dracenas* in variety, and *Callas* grandly flowered. The side stages are filled with useful flowering and ornamental plants, and near the east end is a neat alcove covered with *Ficus repens* and Ferns dotted here and there with a fountain in the centre.

Leaving the conservatory I came to the Plum, Peach and Apricot, and Cherry case, 75 yards long. In this are some good trees of Black Tartarian and Governor Wood Cherries; *Victoria*, *Humboldt*, *Improved Downton*, and *Pitmaston Orange Nectarines*, with *Bellegarde* and *Alexander Peaches*. Entering the kitchen garden I first noticed a span-roofed range running north and south. This is divided into two divisions with side beds and a walk in the centre. In the first house *Eastnor Castle* and *Blenheim Orange Melons* are grown during the summer on one side with Cucumbers on the other. The extension system of Melon growing is adopted; and useful plants of *Mignonette* are grown in this house. In the next division *Roses* and *Pelargoniums* are grown and grandly flowered. The *Early Peach* house is a lean-to structure containing *Alexander* and *Hale's Early Peach* on the front trellis. The first named variety, I understand, does not drop its buds here; a cultural note on that from Mr. Harding would be of value. On the back wall there are *Lord Napier Nectarine* and *Lord Palmerston Peach*. The trees are in grand health and annually produce excellent crops of fruit. The next house is the *Early vinery*, planted with *Black Hamburgh*, *Foster's Seedling*, and *Madresfield Court Grapes*. The foliage is leathery, of good colour, and by strict attention to the roots grand bunches of Grapes are produced. I have seen *Black Hamburgh* here weighing 6½ lbs. and of a good colour.

I next entered a large span-roofed house with side and centre stages, on which are grown many kinds of stove plants, including *Pandanus*, *Crotons*, *Dracenas*, *Coleus*, and Ferns, with *Caladiums*, *Gloxinias*, and a large quantity of *Asparagus plumosus* for cutting. We pass on into the late vinery, which is planted with *Lady Downe's*, *Barbarossa*, *Alicante*, and *Muscat*. Next is a lean-to Pine house containing *Pines* in grand health. *Queens* are the favourites, but other sorts are also grown. *Trophy Tomatoes* in pots are trained as single cordons on the back wall, and produce a grand supply of fruit. *Strawberries* are also grown here on shelves. We next come to a long span-roofed house with side beds and walk down the centre, filled with healthy looking *Pines*, showing some grand fruits.

From this my guide takes me to a lean-to range in two divisions for growing late *Peaches* and *Nectarines*. These structures are fitted with shelves for successional *Strawberries*. About 700 *Strawberries* are forced, the varieties being *Hericart de Thury*, *Noble*, *James Veitch*, *Marshal McMahon*, and *President*. The first house was planted in the front with *Prince of Wales* and *Barrington Peaches*, and on the back with *Lord Napier* and *Pitmaston Orange Nectarine*. In the other house in front *Royal George* and *Grosse Mignonne Peaches* were planted, and on the back wall *Lord Napier* and *Stanwick Elruge Nectarines*. I have yearly seen splendid crops of fruit in these houses, some of *Prince of Wales Peaches* as much as 11 inches in circumference.

In the frame ground close by early *Potatoes*, *Cauliflowers*, *Lettuce*, and *Radishes* are grown in their respective seasons; also *Chrysanthemums* in all the best varieties. Here also is a three-quarter span-roofed house in two divisions, used for *Cucumbers* and *Melons*. *Hero of Lockinge* filled one house at the time of my visit, and a good crop of fruit was swelling. The other division was filled with *Cardiff Castle Cucumber*, which is thought highly of here for winter use.

The Mushroom house is a grand sight, having fifteen beds in it; also convenience for growing *Rhubarb* and *Seakale*. The west walls inside the kitchen garden are planted with *Apricots*, and north ones *Morello Cherries*; while choice *Plums* are grown on east walls, with a glass cover to protect the bloom. Those facing south are planted with dessert *Pears* in great variety, and in all the best sorts. Lifting the roots and an annual top-dressing are thoroughly practised here. I saw some *Pitmaston Duchess Pears* 1 lb. 7 ozs. in weight here, taken from trees lifted the previous year.

Herbaceous plants in great variety occupy the south and west borders of the fruit trees. *Currants* and *Gooseberries* are grown on the north borders, and the inner kitchen garden is divided into four squares, with walls between, and pyramid *Apple* and other fruit trees planted at intervals. These are kept root-pruned, and good annual crops are procured. Amongst other things I noticed *Model* and *Sutton's Queen Broccoli* in good breadths. The "Gentleman" *Potato* is thought very highly of here, one whole quarter of the kitchen garden being given up to the cultivation of it. This variety has a good future before it if kept true. The kitchen garden crops here are of excellent quality, and well repay for the system of annually trenching a portion of the ground for

vegetables. All the departments in these gardens are kept in good order, and reflects the highest praise on Mr. G. Harding, the able gardener.—C. J. S.

#### MR. N. SHERWOOD.

IN commemoration of the jubilee year of the great firm of Messrs. Hurst & Son, wholesale seed merchants, beautiful photographs of the founders and proprietors of the firm have been issued, together with those of members of the staff of the establishment.

We are told that the house was founded in 1843 by Messrs. Wm. Hurst and W. G. McMullen, who for many years represented the well-known seed firm of Warner & Co. of Cornhill, London (long since extinct). These gentlemen commenced business at 6, Leadenhall Street, on a very small scale; both, however, being well known throughout the country, and very greatly respected, the business grew fast, and rapidly became important. After some twenty years Mr. McMullen retired from the firm in consequence of ill-health, and Mr. Hurst took his son William into partnership. The style of the firm was then altered to



FIG. 1.—MR. N. SHERWOOD.

Hurst & Son. Mr. Hurst, sen., died in 1868. The business then devolved on his son and Mr. Sherwood, who married the youngest daughter of Mr. Hurst, sen., and with Mr. Johnson as manager, it was carried on until the retirement of the latter in 1890. Since that time Mr. Sherwood has assumed the entire management, and is now sole proprietor.

We reproduce the portrait of Mr. Sherwood, whose name has become familiar to most readers of horticultural literature through his connection with our gardening charities and the United Horticultural Benefit and Provident Society. He supports these Institutions by his genial presence at the annual meetings and by generous donations. He is the founder of the convalescent fund in connection with the Society last named, and the members, with a host of friends, will be pleased to see his portrait in the *Journal of Horticulture*.

AGRICULTURAL CO-OPERATION.—The twenty-fifth Annual Report of the Council of the Agricultural and Horticultural Association has just been issued to the members. The number of new members joining the Association during the past year has been 178. The total number of members now exceeds 3000, besides 500 co-operative societies supplied with seeds, manures, &c. The sales for the year show an increase of £3,873 4s. 2d., the total having reached £86,326 14s. 11d. In addition to strengthening the Association by writing off a sum of £933 15s. 9d. from last year's profits, a further sum of £2,223 16s. 11d. has been written off plant, &c., by way of depreciations, and £349 13s. 8d. has been added to reserves during the year. The customers of the Association have received £1,961, the employees a liberal share of profit, and there remains an undivided balance of £969, or £36 more than in 1891. As regards details of the business, the Council make a generous acknowledgment of the assistance rendered by the workmen at their profit-sharing works at Deptford, and speak warmly of the good feeling existing there between employers and employed.





**EVENTS OF THE WEEK.**—Apart from the customary auction sales not much of horticultural interest will take place in the metropolis during the ensuing week. On Tuesday and Wednesday, January 10th and 11th, however, the stove and greenhouse plants at Blenheim Gardens will be sold by auction.

— **THE WEATHER IN LONDON.**—Frosty weather continues in the metropolis. Sunday opened fine and seasonable, similar weather continuing on Monday, but with a very keen wind at night. A slight fall of snow occurred on Tuesday, and towards evening it became a little milder. Severe frost, however, was apparent on Wednesday morning, and a dense fog prevailed. The lowest reading of the thermometer in Fleet Street was 24°, or 8° of frost. In the suburbs from 15° to 20° of frost have been registered, at Chiswick 22°.

— **THE WEATHER IN THE NORTH.**—Frost varying in intensity from 5° to 18° on the morning of the 2nd has marked the week ending 2nd inst. The days have generally been duller than those of the preceding. Saturday was an intensely bitter day, with cold E. wind. New Year's Day opened with 9° of frost and a fall of snow sufficient to whiten all around, but little more.—B. D., *S. Perthshire*.

— **DEATH OF PROFESSOR WESTWOOD.**—It is with great regret that we have to announce the death of Mr. J. O. Westwood, Professor of Natural History in the University of Oxford, who was for many years on the staff of this Journal, even from a very early period of its existence. Mr. Westwood was born at Sheffield in 1805, and was consequently eighty-seven years of age. He was distinguished as an entomologist, and his most important works were the "Introduction to the Modern Classification of Insects," published in 1836; "The Entomologist's Text Book," published in 1838; "British Butterflies and their Transformations," 1841; and "British Moths and their Transformations," both beautifully illustrated by his own hand. Professor Westwood was awarded by the Royal Society one of their great gold medals, and he was elected to fill the place of Humboldt as a corresponding member of the Entomological Society of Paris. Professor Westwood died at Oxford on the 2nd inst. at three o'clock.

— **PEAR DOYENNÉ DU COMICE.**—The excellent illustration (fig. 75, page 565, vol. xxv.), and the short but truthful description relative to the value of Doyenné du Comice as a Christmas Pear given by your correspondent, "C. D., *Yorks*," I can fully endorse. With us it is a good cropper alike in the orchard house and as an espalier. We have had some splendid fruit, weighing over a pound each, from trees in 10-inch pots, whilst many of those grown outdoors weighed over half a pound, and this in a very unfavourable season. Of its handsome appearance one cannot speak too highly, for when perfectly ripe it is of a beautiful golden colour, and the flavour, I consider, only surpassed by Marie Louise. This is the kind of Pear to find a ready sale. English fruit growers only want to make such varieties as this thoroughly known in the market. Packed tastefully in boxes they rival any of the French Pears in appearance, and are, if in good condition, far superior in flavour.—R. P. R.

— **WHITE PLUME CELERY.**—Various opinions have been expressed as to the merits, or demerits, of this distinct and attractive looking variety. All admit how quickly and easily it blanches, but many maintain the quality is not good, tender crispness being wanting. I cannot help thinking that this diversity of opinion is accounted for by the great difference in soils and treatment. This variety has certainly proved exceedingly useful with us this season, being ready for table much sooner than any other when grown under the same conditions, and the edible qualities of it have been considered quite satisfactory. Our soil is rather favourable for the production of crisp, clean Celery, being naturally of a sharp gritty nature, and having received heavy dressings of stable manure. This, together with the frequent dustings of soot given to the plants in showery weather, and copious supplies of water when needed, have doubtless brought out the good points it possesses. We shall certainly place great reliance upon the White Plume next year, and would advise those who have not yet given it a trial to do so.—H. D.

— **GARDENING APPOINTMENT.**—Mr. Andrew Duncan, late foreman at Netherby Hall, Langtown, Cumberland, has been appointed gardener to Mr. Schott, Penny Hill Park, Bagshot, Surrey.

— **CROYDON HORTICULTURAL SOCIETY.**—The annual Show of the above Society will be held on Wednesday, July 5th, 1893, in the grounds of Brickwood House, Croydon, kindly lent by J. W. Prince, Esq.

— **A NEW PATENT CALENDAR.**—Messrs. Fletcher, Russell and Co. (Limited) send us a new patent calendar for 1893. It is compact and useful, being fitted with detachable leaves for every day in the year.

— **DEATH OF MR. W. HEALE.**—We regret to announce the death of Mr. William Heale of the Nurseries, Calne and Chippenham, which took place recently at Easterton, Wilts. Mr. Heale was in his eighty-fourth year.

— **HER MAJESTY THE QUEEN** has forwarded to the Secretary of the Royal Agricultural Benevolent Institution, through Sir Henry Ponsonby, a cheque for 100 guineas. This makes Her Majesty's third donation to the Society, in addition to her annual subscription of £25.

— **JAPANESE PLANTS AT CHICAGO.**—An American contemporary states that on December 1st a fine collection of curiously trained plants was received at Chicago from the Botanic Gardens of the Imperial University, Tokio, Japan. The plants all bear marks of the peculiar methods of strangulation as practised by the Japanese. One *Thuya obtusa*, not more than 3 feet in height, with a trunk 6 inches in diameter, is considered to be over 100 years old. Another, a specimen of *Pinus parviflora*, 2½ feet high, is thought to be not less than seventy-five years old.

— **THE WORLD'S HORTICULTURAL PRESS.**—A correspondent of a foreign contemporary has totaled up the journals devoted to horticulture with the following result:—"There are thirty-six in Germany, sixteen in Austria, eight in Hungary, nine in Switzerland, eighteen in England, ten in France, eight in Belgium, six in Holland, three in Denmark, four in Sweden, three in Norway, ten in Italy, five in Russia, one each in Portugal and Spain, nineteen in the United States of America, one in Canada, two in Java, one in Japan, and one in Ceylon, which make a total of 162."

— **WEEKS' HORTICULTURAL POCKET-BOOK.**—We are reminded of another step onward in the career of time by the receipt of the leather pocket "wallet," which the great Chelsea firm distributes at the beginning of each year. It is substantial, compact, and useful. It contains tables of reference for gardeners, blank leaves for memoranda, pockets for stamps, letters, and bank notes, and is illustrated with ornamental and serviceable glass structures which the firm produce so well. We shall be glad if gardeners can fill the wallets well with notes of information and others crisp and crackling that are good companions to their possessors. Our compliments to Messrs. Weeks & Co., and best wishes for a prosperous year.

— **WOLVERHAMPTON GARDENERS' ASSOCIATION.**—At a meeting held at the Midland Café, Queen Square, Wolverhampton, an Association was formed for the purpose of promoting the science and practice of horticulture. The want of an institution of this kind has been long felt. Mr. G. A. Bishop, The Gardens, Wightwick Manor, was elected Chairman; Mr. R. Craigie, The Mount Gardens, Hon. Sec.; Mr. McPherson, Hon. Treasurer; and a good representative Committee was formed, with the Mayor of Wolverhampton, C. T. Mander, Esq., President, and most of the leading gentlemen of the neighbourhood, Vice-Presidents, the Institution should be a success in every way. The first meeting took place on Tuesday last, when a paper was read by Mr. Bishop.

— **PEACH YELLOWS.**—Is the disease known as "Peach yellows" contagious? This question was recently considered in America, and the following is the result:—"The disease is contagious, and may be conveyed by healthy-looking buds when these are taken from partly diseased trees. Only a small amount of infectious matter is necessary to produce the disease, provided it is in the form of living cells which can be induced to unite with the actively growing tissues of the inoculated tree. In some cases the disease has a period of incubation extending over two years, and the probabilities are that additional experiments will demonstrate in some cases a still longer period. Many hundred experiments have proved these conclusions to be correct. The life of inoculated trees varies from one and a half to four and a half years. In orchards the death of the entire tree occurs in from one to six years. In a majority of cases the disease is chronic, and some part of the tree may live for a long time."



— **DEVON AND EXETER HORTICULTURAL SOCIETY.**—We understand that the Shows of this Society for the ensuing year are to be held as follows:—Summer Exhibition, August 18th; autumn, November 10th. Both Shows will be held at Exeter.

— **ENGLISH GRAPES IN AMERICA.**—Some months ago we referred to the fact that English grown Grapes were being exported to America with satisfactory results. Now we learn from the *Garden and Forest* that Black Hamburgh Grapes grown in England were recently sold in New York at 10s. per pound.

— **FARRINGDON STREET MARKET TOLLS.**—It has been decided by the Markets Committee of the Corporation of London that the exaction of tolls for produce sold in Farringdon Street new market shall be suspended for a year from January 2nd.

— **POPPIES IN THE ARCTIC REGIONS.**—A botanist reports that in the northern part of Greenland the Arctic Poppy forms one of the most beautiful features in the floral scenery. The flowers grow in immense sheets, giving a golden character to the country, that would, it is said, scarcely be equalled by a large field of Buttercups or Dandelions. Pure white blossoms are not infrequent among the yellow ones.

— **THE MEDICINAL PROPERTIES OF CEREUS GRANDIFLORUS.**—An American paper states that an extract obtained from *Cereus grandiflorus* is considered by physicians as an almost infallible agent for heart disease, they claiming it to be superior either to *Digitalis* or *Belladonna*. Two hundred pounds of this plant were recently shipped from the mountain country of Mexico to a well-known manufacturing druggist of New York city.

— **RAINFALL AT CUCKFIELD, SUSSEX, DURING DECEMBER.**—The rainfall during the past month was 2.60 inches, being 0.14 below the average. The heaviest fall was 0.51 inch on the 1st; rain fell on twelve days. Total for the year 27.05 inches, which is 3.60 inches below the average. Maximum temperature 53° on 15th; minimum 26° on 26th and 30th; mean maximum 42.2°; mean minimum 30°; mean temperature 36.6°. Partial shade readings 2° below the average.

— **A LARGE TREE.**—The section from one of the big California Redwood trees, which the United States Government will exhibit in its building at the World's Fair, has arrived at the Fair grounds. Eleven freight cars were required to convey it across the continent. It measures 30 feet long by 23 feet in diameter. The section is hollowed out, and when placed on end, divided into two storeys and lighted, as it will be, it will form a rustic house large enough for a family to live in.

— **SULPHATE OF IRON FOR FRUIT TREES.**—A correspondent writes:—"Apropos of your reply regarding sulphate of iron for Apple trees on page 573, December 29th, the following extract from a foreign contemporary might be of interest:—'It used to be thought beneficial to put the cinders and iron scales from the blacksmith's shop around fruit trees. Now the Australian fruit growers are digging trenches around the tree, and turning in a solution of sulphate of iron, made by dissolving the sulphate in water. For a large tree the trench should be 5 or 6 feet from the trunk.'"

— **MESSRS. FOSTER & PEARSON'S SHEET ALMANACK.**—We are favoured with the roll of twelve sheets, one for each month, in which the days and dates of the year are set forth with admirable clearness. Each sheet is margined with brief seasonable reminders on gardening operations, and on each is also displayed some of the specialities of the firm that have proved so useful in many gardens; and if gardeners could have their way, and amateurs do what they wish, the great Notts firm would have what we hope and feel sure will be their experience—a prosperous year.

— **FIELD VOLES IN SCOTLAND.**—The Committee appointed by the Board of Agriculture to inquire into the plague of field voles in Scotland have declined for the present to recommend the adoption of the plan lately carried out in Thessaly by Prof. Loeffler, who claims to have got rid of voles in that district by feeding them with prepared bait containing the germs of mouse typhus. It is thought that Prof. Loeffler may not have attached sufficient weight to other causes which have doubtless operated to reduce the swarms of voles in Thessaly, such as the heavy rains which on the low ground would flood the holes and runs of the mice. The Chairman of the Committee, Sir Herbert Maxwell, and the Secretary, Mr. J. E. Harting, with the sanction of the Board of Agriculture and of the Treasury, are, says "Nature," about to proceed to Thessaly for the purpose of taking evidence there and reporting.

— **SILVER MEDAL ESSAY.**—We have the pleasure to announce that one of the silver medals of the *Journal of Horticulture* has been awarded to Mr. G. A. Bishop, gardener to S. T. Mander, Esq., B.A., Wightwick Manor, Wolverhampton, for an essay on "Manures and their Application." The essay will be published in our columns when space becomes available.

— **A NEW HORTICULTURAL INDUSTRY IN CALIFORNIA.**—There is a prospect that California may have a new horticultural industry. A Frenchman has discovered that the California Roses possess 20 per cent. more volatile oil than the French Roses. If so we may expect attar of Rose and Rose extracts from that State soon. Are English Roses less productive in this respect?

— **GARDEN SCHOLARSHIPS.**—This is the title of a small pamphlet issued from the Missouri Botanical Garden, U.S.A. It is the fourth announcement concerning garden pupils, and is published with a view to encourage young men to take greater interest in gardening. The pupils sit for an examination, and those who pass are regarded as apprentices in the above-mentioned botanical garden.

— **OUTDOOR ROSES AT CHRISTMAS.**—"Walking on Christmas Day from Hastings to Battle," writes a correspondent, "I saw several Roses in bloom on a small cottage, and in a wood close by were many Primroses in full flower. I was informed by a woodcutter that he had that morning seen a thrush sitting on three eggs." Surely a striking contrast to the weather experienced in London and the North at Christmas!

— **FROST IN STIRLINGSHIRE.**—For three days in the beginning of last week the frost here was most intense. The maximum and minimum were, 25th ult., 26°, 12.6°; 26th, 22°, 11°; 27th, 29.6°, 10.2°; a mean temperature for the seventy-two hours of 18.5°. After the 27th ult. it got rather milder, but yesterday and to-day (January 2nd) the frost has again set in more severe with a slight fall of snow. The mean maxima for the week 31.9°, and mean minima 19.2°.—G. MCDUGALL, *Stirling*.

— **NATIONAL AMATEUR GARDENERS' ASSOCIATION.**—A meeting of this Association was held at the Memorial Hall, Farringdon Street, on Tuesday, January 3rd, under the presidency of Mr. T. W. Sanders. Mr. J. B. Riding, Chingford, read a practical paper on "Gloxinias," which excited some interest amongst those present, a lengthy discussion following. Twelve new members were elected, and the Honorary Secretary, Mr. D. B. Crane, announced that an excellent syllabus for the ensuing year had been prepared.

— **HABITS OF BIRDS.**—Birds vary in their habits in various localities. I never have a Crocus, Hepatica, or a Primrose touched by the birds, while not much more than a mile away Hepaticas and Primroses are destroyed annually in one large garden. Sparrows build in the Roses on the front of my house and in a Hawthorn arch in my garden, but not even the yellow Crocus is touched. They sometimes pull a few flowers of *Saxifraga Wallacei* to mingle with their building materials, but it is plentiful enough, and I can spare the few blooms they take.—S. ARNOTT.

— **LECTURES ON MANURES.**—A course of a dozen lectures on the "Action of Manures" has been delivered at Aldbrough, Hull, by Dr. J. Clark, of the Yorkshire College, Leeds, under the auspices of the East Riding County Council. On Thursday, the 22nd ult., the lecture was devoted to the action of manures on garden vegetables. The lecturer dealt more particularly on the action of farmyard and artificial manures upon Peas, Beans, Cabbages, and their allies—Onions and Leeks. The lecture was illustrated by limelight, and there was an attendance of eighty-six. Mr. J. W. Fell acted as Honorary Secretary.

— **A BOOM IN BANANAS.**—We have no information on the subject from fruit merchants in this country, but in the Eastern States of the Union there is, says a daily contemporary, an outcry that the rapid development of the trade in Bananas is seriously hurting the Grape market—that is, for Grapes as fruit, and not for the wine vat. It is certainly now quite a familiar fruit in this country, whereas a very few years ago it was almost unknown; but it is still rather high in price to reach the masses of the people. An American paper alleges that during August and September the Bananas imported into the United States aggregate 70,000 tons. We should think that if such an importation to this country were possible Bananas would soon be as cheap as Oranges or Apples. They are said to be very sustaining, and are very portable.



— **REPORT OF THE WEATHER DURING DECEMBER, 1892, AT HAMELS PARK.**—The weather during the past month has been of a very changeable character, commencing with hard frost and some light falls of snow; then came a few days of very mild weather, to be again succeeded by hard frosts, which have continued up till the present time. On some mornings 21° of frost were registered on the ground here during the latter part of the month. Rain fell on eleven days during the past month. Maximum mean any twenty-four hours was 0·42 on the 1st; minimum mean any twenty-four hours, 0·01 on the 11th; total during the whole month, 1·73, against 3·46 of 1891.—E. WALLIS, *The Gardens, Hamels Park, Buntingford, Herts.*

— **PRESERVING WHOLE TOMATOES.**—We have had inquiries for a method of preserving Tomatoes without the admixture of ingredients that would affect their flavour. An Aldershot correspondent has sent the following recipe to Mr. G. A. Sala's interesting journal. The method, it appears, is adopted in Malta. "A thick layer of *dry* salt is placed in the bottom of a packing case, in which the Tomatoes are embedded, leaving a space of an inch or two between each fruit. Salt and Tomatoes are placed in alternate layers until the box is full. It is kept in a dry place, and the fruit keep well, turning out with a very slightly wrinkled skin, otherwise as bright as when plucked from the plants. Ripe, but not overripe fruit should be selected." The only failure was through overripe fruit bursting, and it is also essential that the salt should be *dry*. The recipe is worth a trial.

— **A HEAVY CROP OF POTATOES.**—Writing recently to a local newspaper, Mr. G. Harris, gardener, Alnwick Castle, Northumberland, says:—"We had such a fine crop of several varieties of second early Potatoes in 1891 that I was curious to know how much per acre was produced. The result was over 15 tons. Again, in September, 1892, the crop was extra fine. The Potatoes were carefully weighed, and the result was over 19 tons per acre from several varieties, with scarcely any disease and very few small tubers. This was not an experiment, but the ordinary course of gardening. There had not been Potatoes grown in either of these divisions for several years previously. There is a large quantity of humus in the form of decayed stable manure, certainly not rich in itself, in the land. A quantity of wood ashes, soot, and a general artificial manure had been applied to the previous crop. A light dressing of lime was given in each case when the ground was trenched during the winter before planting, the soil left rough in ridges to be pulverised by the frost. The latter plan is not sufficiently acted upon by allottees. In the spring the land was levelled down (end of March), and the Potatoes planted in rows, 2 feet apart by 15 inches in the row, inserted about 4 to 6 inches with a dibbler. Long stalked Potatoes require more room than this. If we could grow 10 to 14 tons per acre more frequently over the country, we should be able to export instead of import."

— **FLAVOUR AND YELLOW FLESH IN FRUITS.**—Can anyone who is capable of elucidating this interesting point tell us what affinity there is between flavour and the yellow tint found in fruits and vegetables? It is true that there is very little indeed of yellow in Pears or Melons, but then relatively how comparatively little of flavour. On the other hand, the richest of flavour found in fruits is perhaps in Pine Apples and Apricots, the yellowest of fruits, or in golden Plums, especially those of the Gage section. But the yellow tint in alliance with flavour is perhaps most marked in Apples of all fruits, for the simple reason that the greater portion of these fruits are white fleshed, whilst the yellow fleshed sorts always show the finest flavour. The very same thing is found in Potatoes, for whilst the bulk are of white flesh, the most pleasing varieties when cooked are those which have yellow tinted flesh. Then, if we turn to Vegetable Marrows, we find the same thing evidenced, and there are for flavour none so good as the yellow flesh Squashes, although in these, as also in the case of Turnips, yellow is a tabooed colour. The golden or yellow Turnips of the garden section are much more highly flavoured than are the common white ones. It is even held that yellow Tomatoes are superior to red ones, but in that case the colour is not so pronounced, being chiefly skin deep. The Golden Muscat of Alexandria Grape still ranks amongst the highest flavoured of that fruit, while if yellow-skin Peaches are not regarded as of such high flavour as red ones, we find green fleshed Melons usually of higher flavour than are white or scarlet fleshed sorts. Naturally it is not possible to lay down any hard and fast rule in relation to flavour and colouration, but the many cases quoted serve to show that some connection between yellow flesh and flavour is apparently evident. Most certainly the richest and most luscious of fruits, the Pine Apple, is yellow throughout, and of stone fruits the yellow Apricot and Golden Gage Plum find no superiors.—A. D.

— **GLASS LABELS.**—I have used, writes Max Leichtlin in the *Garden and Forest*, in the boxes where I keep my rarest plants glass labels, with good results. They are made of milky glass, which is dipped in some acid to take off the gloss and thus produce a soft surface, which is very agreeable to write upon. The names traced with a hard pencil stand the weather well, and the labels look like porcelain and are perfectly clean. By rubbing with emery paper, sand, and water the writing can be perfectly effaced and the label used again. This form of label, however, has one great disadvantage, that is, a brittleness which makes it very liable to break.

— **SPRAYING APPLE TREES.**—The question as to the danger of poisoning resulting from the use of Paris green on fruit trees has been tested in Canada. At an experiment farm a peck of Apples was taken from a tree that had been sprayed twice with Paris green at the rate of 1 lb. to 200 gallons of water. They were gathered carefully, and analysed without rubbing or wiping. If there had been a fatal dose—2½ grains of arsenic in 23,000 bushels—they could have detected it, as they can find 1-50,000th part of a grain, but they failed to find even a trace of it in the peck. From this one may infer that with due care no injurious results are likely to accrue from its use, whilst a crop may often be spared if spraying is judiciously performed.

— **MESSRS. DOBBIE & CO.'S SOCIAL MEETING.**—In the Lesser Public Hall on the 30th ult. there assembled a company of about ninety, over which Mr. Wm. Cuthbertson presided. The occasion was the annual social meeting of the employes of Messrs. Dobbie & Co., seedsmen, and friends. The Chairman was supported by Mr. Robt. Fyfe, Bailie Burness, Mr. James Dobbie (founder of the firm), Mr. Andrew Mitchell (manager of the firm's seed farm at Beaulien, Hants); Messrs. S. Jones and R. Smith, heads of departments at Rothesay, and others. Mr. Cuthbertson, in his opening address, said he believed the horticultural trade was on the eve of a very great development. There was a cry for fruit culture, small holdings, and allotments, and it might be the duty of the horticulturists to take from the land that successful result which the farmer had failed to secure. He concluded with a few words of compliment to Mr. Dobbie and the expression of the hope and belief that if all the employes and the heads of the firm continued to do their duty there was nothing but prosperity in store for them.

— **FERTILISERS AND SOILS.**—A series of investigations on soils is in progress at the Maryland Agricultural Experiment Station, in co-operation with the U.S. Department of Agriculture and the Johns Hopkins University. So far the work has been on the physical structure of the soil and its relation to the circulation of soil water, and the physical effect of fertilisers on soils as related to crop production. The surface tension of various solutions was first of all determined. The solutions chosen included common salt, kainit, superphosphate of lime, soil extract, and ammonia. The soil extract was made by shaking up a little soil with just sufficient water to cover it. The water was afterwards filtered off and used for the determination. This operation reduced the surface tension of water considerably, but the experiments do not appear sufficiently complete to indicate reasons for this. Analyses of the soils are not given. Ammonia and urine lowered the surface tension of water considerably below that of the soil extract, and still more below that of pure water. Common salt and kainit increase the surface tension of water, and no doubt, says "Nature," this is the reason why the application of these substances to the soil tends to keep it moist, whereas the excessive use of nitrogenous manure has the reverse effect.

### CAMELLIA SASANQUA.

No little interest was aroused at the last meeting of the Royal Horticultural Society by the exhibition of the Japanese Camellia Sasanqua by Messrs. J. Veitch & Sons, and a first-class certificate was awarded to it. The plant is not of quite recent introduction, having been sent to the Chelsea firm by Mr. Maries some fourteen years ago, but in all probability it was new to the majority of the visitors to the Drill Hall on the occasion referred to.

Camellia Sasanqua (vernacular name Sasank'wa) was first made known to science through Thunberg towards the end of the last century. It occurs wild in Kinsin, the southern island, and is cultivated farther north. The wild plant is an upright shrub from 5 to 10 feet high, flowering from December to February (Siebold).

At Coombe Wood Messrs. Veitch & Sons find C. Sasanqua much hardier than the ordinary Camellias, and it also sets its flower buds much more freely. This is a point that is well worth bearing in mind. It is worthy of trial as affording variety in a collection of climbers out



of doors, and although not tender it would be advisable to give it the advantage of a sheltered wall in order to encourage the ripening of the wood, the setting of the flower buds, and to protect the flowers from

brush of yellow stamens. A double white form, a variety from it, was also shown. *C. Sasanqua* might prove serviceable for hybridising, and a race uniting its qualities of hardiness and bud-retention with the beauty



FIG. 2.—CAMELLIA SASANQUA.

injury at the unsettled period of their development. The plants exhibited were bloomed in a cold house without any heat, and it will be noted that they were in flower at the middle of December. The type (fig. 2) is single, and has bright rosy pink flowers with a prominent

of bloom displayed by our choice varieties would be very valuable. The following references may be found useful by those desiring further information respecting it. Thunb., *Fl. Jap.*, p. 275; Sieb. et Zuc., *Fl. Jap.*, I., p. 158, t. 83; Franch et Sar, *Enum. Pl. Jap.*, I., p. 60.





## THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE members of the General Committee of this Society held a meeting at Anderton's Hotel, Fleet Street, on Friday evening last, to consider the report of the Schedule Sub-Committee, and transact other routine business. Mr. Rd. Ballantine occupied the chair.

Mr. R. Dean, in presenting the report, announced that the Dowager Duchess of Sutherland and Lady Saunders had consented to become patronesses of the Society, and that Sir Trevor Lawrence, Bart., President of the Royal Horticultural Society, Sir Hy. Peek, C. C. Paine, Esq., and Leopold de Rothschild, Esq., would be added to the list of Vice-Presidents. The Sub-Committee recommended that in future the Floral Committee consist of eighteen members, instead of fifteen as hitherto, one-third retiring annually, but being eligible for re-election. It was further recommended that the Chairman of the Floral Committee shall be annually elected by the General Committee at their first meeting after the Society's annual meeting, and that such Chairman be elected from the members of the Floral Committee. In the general regulations for exhibitions a few verbal alterations were recommended, the principal one being that the Arbitration Committee shall have power to reject any products not considered worthy of exhibition.

There will be no September Show held by the Society. This has been taken over by the Royal Aquarium authorities, but the N.C.S. will provide a sum of money to be offered for early flowering Chrysanthemums at that Show. Mr. G. Gordon and Mr. H. J. Jones will be the judges the Chrysanthemum classes; the other judges will be appointed by the Aquarium Society. An October Show will be held, as was the case last year; the judges appointed will be the same. At the great November Show Mr. J. Lyne and Mr. S. Gilbey were recommended as judges in classes for plants, and Mr. A. F. Barron for fruit and vegetables, in the place of Mr. G. T. Miles; all the others remain as before. On that occasion the Floral Committee will meet on the second day of the Show, instead of the first as heretofore. There will be an Exhibition of late flowering varieties in December, and the classes proposed were announced. Mr. J. Kipling and Mr. H. J. Jones were proposed as judges.

An addition to the special regulations will be made to the following effect:—All cups or wires for exhibiting Japanese blooms shall be limited to 3 inches in diameter, and no extra supports of any kind shall be allowed. The alterations proposed in the various classes are too numerous to be dealt with in detail, and readers must be referred to the document itself when published, which will be somewhat earlier in the new year than before.

A list of special prizes was read from Major Collis Browne, Mr. W. J. Godfrey of Exmouth, Mr. R. Owen, Mr. H. J. Jones, C. C. Paine, Esq. Mr. E. C. Jukes intimated his willingness to offer a silver-gilt medal, a silver medal, and a bronze medal as prizes, to be offered in a new class composed only of small flowering incurved varieties like those of the Rundle family.

After some little discussion the report was adopted.

A member inquired whether the Society had any rule by which another member guilty of irregular conduct could be expelled, and was answered in the negative. Mr. Addison thereupon stated he had drafted a rule to that effect, and intended to move its adoption at the annual meeting. Several inquiries were made as to when the annual meeting would be held, and the Secretary stated it would be announced in the gardening papers in due course.

I SHALL be glad if you will allow me to reply, as briefly as possible, to the letters from Mr. Chas. E. Pearson and Mr. Henry Havelock, which appeared on page 553 (December 22nd). Both correspondents condemn the preponderance of metropolitan growers and exhibitors on the General and Floral Committees of the N.C.S.

As I pointed out at the annual dinner of the Society, this, if true, is entirely the fault of the country growers. Each affiliated provincial society (of which there are now eighty-six) has the right to send a representative to the General Committee, and this right, if acted upon to any considerable extent, would place the country members in a large majority on the governing body. The representatives of affiliated societies are usually, I am sorry to say, "conspicuous by their absence." I, personally, do not believe that it is the slightest use to have on the Committee men who cannot or do not regularly attend its meetings; and I entirely fail to see how the stability of the N.C.S. would be increased by electing such. However, the country members have the matter in their own hands.

One-third of the General Committee (by whom the members of the Floral Committee are appointed) retire from office at the annual meeting, and the country growers can easily, if they choose to attend that meeting, secure the election of a fair proportion of men who do not reside in or near London. If they will not take the trouble to do this it is surely unreasonable to blame those who do take an active interest in the Society and regularly attend its meetings.

As regards the "Beauty of Exmouth" case, Mr. Henry Havelock will see from the report of the Committee meeting held on Monday evening, Dec. 19th, that the Committee have not "treated the charge with

indifference," but that, after investigation of the circumstances, they have found it impossible to deal with it effectively without laying themselves open to a charge of libel. The "Wells" case was also fully discussed, and a resolution passed with regard to it.

And now, as to the appointment of Judges. From personal experience I can unhesitatingly say that these are selected without the slightest regard to their place of residence, or to their connection with the N.C.S., and that personal fitness for the post is the only consideration which has any weight with the Committee. That several of the Judges appointed are members of the Floral or General Committee can hardly be avoided, since most of the leading authorities upon Chrysanthemum culture belong to one or other of those bodies.

Nor is the method of the N.C.S. in this matter different from those of the R.H.S. and other National Societies, yet your correspondent does not find fault with these. Whilst agreeing with him as to the inadvisability of appointing local judges for local shows, I cannot see that the cases are at all parallel, or that the objections to such a mode of procedure apply in the least to the question under discussion.—EDWARD C. JUKES.

THE action of the Committee of this Society in relation to two complaints, made by exhibitors of new Chrysanthemums for certificates, against members of the Society's Floral Committee is astonishingly inconsistent. In the first case, that of Mr. Godfrey's complaint, the Editor of the *Journal of Horticulture* is taunted with not having published Mr. Godfrey's letter, and thus being rendered liable to an action for libel. The Committee shelters itself behind the very same plea in refusing to publish the name of the member of the Floral Committee implicated. Then, the Committee is careful to express no opinion as to whether Mr. Godfrey's charges are true or false, beyond saying that they are "vague." What is the natural deduction? Why, that the Committee prefer not to have to make the inquiry Mr. Godfrey desired. The country will draw its own inferences. Then in the second case, the charges made against a member of the same body also (I do not say "another" member), the Committee admit that the charge is proved by giving to the offender a severe reprimand. If one charge be substantiated, what is the natural corollary but that the other is not groundless? But mark this; whilst the Committee reflect strongly and most unjustly upon the action of the Editor in refusing to publish Mr. Godfrey's letter, containing what they call a "vague" charge, they having before them a charge from another source which is found to be true, and of which the offender is found guilty, yet themselves refuse to publish the offender's name. How grossly inconsistent! Can anything said by critics which so severely reflects upon the Committee of the N.C.S. as their own action in this case? One thing is certain—whilst thus protecting offenders, most persons appear to know very well who is aimed at.—ALPHA.

I HAVE noticed in the *Journal of Horticulture* that a member was condemned at the N.C.S. meeting. Was that me do you know? By the *Gardeners' Chronicle* it certainly looks like it (see page 773). Surely honest truth ought not to be condemned, and I can prove that all I have said is true. I do not know what all the members of the N.C.S. Committee think, but I know what some of them, and also the outside public, think of the peculiar proceedings.

I certainly do think the Secretary of the N.C.S. ought to bring all letters before the Committee which are addressed to them. Had he done so in this case, and I received an apology, the affair would have ended, but to have a letter from an individual member of the Floral Committee of the N.C.S. telling me he will take steps to prevent me showing among them if his small account is not paid is intolerable. The letters I have received from various people do not condemn me for the steps I have taken; what could I have done otherwise? I do not believe in sitting down and being trampled upon, and I resent petty tyranny. I did not intend the matter should be smuggled over.

The photograph of the famous letter was exhibited at the Aquarium because my letter was not brought before the Committee. Mr. Dean, in acknowledging the receipt of my letter, said he did not think "it a matter for the Committee." He passed the letter to Mr. Ballantine, who told me in his reply that "the matter must be settled in the County Court, and not by the Committee of the N.C.S." Mr. Dean expressed his surprise (page 400, November 3rd, 1892) that Mr. Godfrey "did not address his complaint in the first instance to the Secretary of the Society." This is just what I did, with the above result, and I was driven to take strong measures to get my case considered on its merits by the Committee. Their decision is my justification; but they have not published the name of the member whose action they condemned, much as they cry out for the publication of a name in another case which seems to have been "investigated" and (so far) settled on the mere word of the defendant? Can a precedent be found for this method? I think it must be new.

I am very pleased to learn there are gentlemen making inquiries into the whole matter. I should be very sorry to see the N.C.S. suffer for just one individual, but suffer it must by such indiscretions as have been dragged to the light. Is a man who wrote such a letter as that referred to a fit and proper person to be on the Committee of a National Society? Men of known discretion and free from all trade bias are needed there if anywhere. What is the effect of one weak link in an otherwise strong chain?—W. WELLS.

[We shall be pleased to insert a characteristic letter from Mr. Henry Cannell in our next issue. We should like a fair argument on



both sides, temperately expressed, as in the able letter of Mr. Jukes. "Alpha" is severely logical, and Mr. Wells is entitled to his explanation and comments. We do not know whether he is the member who was condemned or not, as we have received no official information on the point. We have been asked by the officials to publish the name of an individual against whom charges were made and who was *not* condemned for them; the same officials refrain from publishing the name of a member whose action they *have* condemned.]

#### CHRYSANTHEMUM PIDSLEY'S FAVOURITE.

THIS Chrysanthemum was raised by Mr. W. K. Woodcock, but the rage for large exhibition flowers has kept it in the background. It is one of the most effective decorative plants for the conservatory, having a most peculiar colour which is difficult to describe. A deep reddish salmon will, however, give an idea of its colour. Its flowers are similar shape of William Stevens. My plants were grown naturally, but slightly disbudded, and they had about a hundred flowers on each plant in 9-inch pots.—J. L.

#### GOLDEN WEDDING CHRYSANTHEMUM.

THE arrangement of our controlling the European stock of this variety, as stated in the *Journal of Horticulture* a few weeks ago, and sent out by the well-known American firm of Messrs. Peter Henderson and Co., has been cancelled.—JOHN LAING & SONS.

#### CHRYSANTHEMUM JOHN LAMBERT.

WHETHER this variety is recognised or not in the N.C.S. catalogue, it certainly speaks favourably respecting it. I quote the following from the centenary edition:—"John Lambert, which originated as a sport from Lord Alcester, is similar in form to its parent, and of practically the same colour as Golden Queen, and is perhaps the best stock of that variety." With that sentence I fully agree, and if John Lambert is the best stock (and therefore an improvement), why not act fairly and give the raiser the credit of it? I have for the past two seasons grown Golden Queen, Emily Dale Improved, and John Lambert, to fairly test the merits of each, and I have no hesitation in saying that the latter variety is decidedly the best. The growth of the plant is more free; I have found it more constant, and the flower is of better build, and possessing more solidity than either of the others.

This is just what one would expect, it being a sport from Lord Alcester, which is without a doubt the most perfectly built incurred in cultivation. Being fully convinced of the superiority of John Lambert, and taking into consideration that it has been awarded a F.C.C. under that name, I should think it a very unfair proceeding were I to exhibit this variety under its proper name, to find some other person had erased it and substituted another.—F. HOPKINS, *The Chestnuts, Walton-on-Thames*.

THE N.C.S. have recognised John Lambert. In the first place the Floral Committee gave undressed blooms a first-class certificate as a distinct variety; then the Catalogue Committee two years back classed it as synonymous with Golden Queen of England and Improved Emily Dale, describing J. Lambert as perhaps the best stock of the type. I find some of our best exhibitors have thrown Golden Queen of England away, and kept J. Lambert as advised by "Lancastrian" last year in your paper. I had no intention of again raising this controversy, only I notice where Mr. Molyneux judges I find Golden Queen of England substituted for John Lambert. This is misleading to the public, and I do not find any other member of the N.C.S. acting in this way when judging at shows. I wish to ask Mr. Molyneux, as he seeks to shelter himself under the N.C.S. rules, if he, when judging at shows where the National Society's Catalogue is to be the guide, goes by its rules in preference to his own judgment?—JOHN LAMBERT, *Powis Castle*.

#### CHRYSANTHEMUM MRS. ALPHEUS HARDY.

ON page 532, last vol., I notice inquiries for successful culture of the above Chrysanthemum. Having been fairly successful with it this season, I venture to give my method of treatment. I would remind cultivators not to discard this variety too hastily, as many have already done. When its culture becomes better known it will be seen more frequently on the exhibition board than hitherto. Propagated and grown the same as the general stock, with the same soil and mode of potting, allowing it to form its own natural break, retaining three shoots and saving the crown buds when they show, and housing with the general collection would, according to my experience, only end in failure. When well grown I consider this one of the finest white Chrysanthemums extant. I have had blooms this season 7 inches in diameter and  $3\frac{1}{2}$  inches deep; but I find them very liable to damp, and do not keep good more than a week at the most. I have exhibited flowers on two occasions this season, but unfortunately they were much reduced in size through having being a trifle too early, and suffering with damp as well.

I would advise striking this variety about the middle of December. Insert the cuttings singly in thumb pots nearly half filled with small broken potsherds, using a compost of peat, leaf soil, and sand in equal parts, well mixed. Put a little sand for the base of the cutting to rest on when inserting. Do not water if the soil is in a moderately moist condition (as it should be) but give a light sprinkle with a fine rose can, as the cuttings strike better than if watered too much. When rooted, do not be in too great a hurry to shift into larger pots, but keep them in a temperature of 45° to 50° near the glass. The cuttings must on no account be placed in cold frames. About the end of February shift into small 60's, using the same compost as for striking, adding a

little pounded charcoal, well draining the pots and potting rather lightly. At the same time place a small stake to each plant, as the stems are very very brittle, and must be kept well tied up all through the season. When recovered from potting place on a shelf in the greenhouse near the glass. Be careful with the watering, as the plants are very impatient of too much water at the roots in all stages of growth.

About the first week in April the plants will require shifting into 48 pots, using two parts fibrous peat, one part light fibrous loam, one part leaf soil partly decayed, with some pounded lime rubbish, charcoal, and sand well mixed. Pot a little firmer than before, but very firm potting must not be practised, as it is a feeble rooting variety. Provide good drainage; a light position on the front stages of the greenhouse near the glass will now be found suitable, as the shelves during April are too hot and dry for Chrysanthemums. As soon as the roots have taken hold of the new soil take out the tips of the shoots, and immediately they break rub all away except the strongest one and encourage this to grow, as it is from this growth that the flower will be produced. As soon as the plants require shifting into larger pots, which will be about the middle of May, they may receive their final potting, three plants going into a 12-inch pot, which should be nearly half full of carefully placed drainage, covering this with a little rough fibrous peat. The compost for this potting should consist of two parts fibrous peat, two parts light fibrous loam, one part half-decayed leaf soil, some charcoal, broken lime rubbish, and sand well mixed; no manure must be added to the compost. Work the soil well between the plants with the hands moderately firm, finishing off evenly on the surface; do not use the potting stick, firming with the hands is quite sufficient. Place a stake about 6 feet long to each plant. Be careful with the watering after potting. Still keep the plants in a greenhouse with plenty of light and air.

About the middle of July place them outside in a sheltered sunny position to ripen the wood. Give the plants support to prevent their being blown over by wind, and keep the shoots well tied. About the end of July or beginning of August the buds ought to show; these must be saved in all cases. Take the plants inside again about the end of August—into a light airy house with plenty of air night and day for a time, according to external conditions of the weather. No artificial stimulants must be applied to this variety, only a little weak soot water occasionally. If all goes on well the plants ought to be in flower and in good condition about November 6th. When showing colour they are best kept in a rather dry warm temperature, as they open a purer colour, and are not so liable to damp. Any attempt to keep the flowers in a low temperature after being taken from the warm house will end in failure, as they soon damp. They will keep far better on the plants in the warm dry atmosphere than cut and placed in bottles in cool places—at least this is my experience.

This was the first of the hirsute varieties sent out, and, as far I have seen it is still the best when in good form, and worthy of more extensive cultivation.—JAMES HAWKES, *Lillingstone House Gardens, Buckingham*.

#### PROFITABLE CHRYSANTHEMUM GROWING.

RESPECTING the amount of profit to be realised by the cultivation of the Chrysanthemum nothing definite can be stated, for that point greatly depends upon circumstances, which we are often reminded "alter cases." But it is obvious that the grower who is able to dispose of his cut blooms privately has a decided advantage over the ordinary market grower. The former has the field to himself and can to a great extent fix his own prices. In this way he supplies the public at first hand, and without the aid of an intermediate party. This increases the value of his produce, and from this point of view the Chrysanthemum is a promising and lucrative investment.

The market grower stands on very different ground. He can dispose of large quantities, but he has to take the prices that rule in the market, whether they are high or low. Good quality no doubt tells in the long run, but this fact is not always so apparent as it might be. Frequently he has to contend with glutted markets, depression of trade from bad weather, and numerous other causes, when the supply being far in excess of the demand superior blooms have to be sacrificed at a very low figure. The reverse of this is sometimes seen, when a particular colour or variety is scarce, a high price can then be obtained for second-rate flowers.

It is no part of the market grower's business to supply cuttings and young plants, therefore the varieties in general use are comparatively few in number. It does not matter whether they are old favourites or recently introduced novelties, but their selection is the result of careful consideration. The leading features in market Chrysanthemums are colour, size, a vigorous habit of growth, and floriferousness. Preference is likewise given to those sorts that can be kept longest without losing colour or otherwise deteriorating.

The object in view is to secure a continual succession of flowers, so that as fast as certain varieties are disposed of others are opening ready to replace them. The Desgranges and earlier varieties are grown in quantity, and are often flowered before they need removal indoors. On them I need not dwell, so I pass to the commencement of the Chrysanthemum season proper, which I will fix about the middle of October.

Operations commence with Lady Selborne, James Salter, and Mons. W. Holmes, representing respectively effective shades of white, pink, and crimson. These are followed closely by La Triomphante. This comparatively new Chrysanthemum is an immense favourite with market growers, judging by the way they have taken it up.

By this time a clearance of the early sorts has been made, and Source d'Or, Mdle. Lacroix, and Elaine come to the front. The two first



mentioned are very popular; but regarding Elaine I have heard expressions of disapproval from market men lately who complain that it cannot be kept for any length of time without showing its eye. This looks like rank treason, but several growers have freely expressed in my hearing their intention of growing it in less bulk, and replacing it to some extent by Madame Louis Leroy. I should think them likely to alter their views, for no Chrysanthemum secures better prices than Elaine, and if I were asked to name the premier market white, I should consider this variety's claims superior to all others.

After these the midseason varieties are in request to carry on the supply. They are somewhat numerous, and it will be sufficient to name some of the most popular. Amongst them can be seen Stanstead White, Sunflower, Mr. Geo. Rundle, Mons. Astorg, Fair Maid of Guernsey, Jardin des Plantes, Chevalier Domage, Cullingfordi, Victor Lemoine, and La Belle Jaune. A little later we find Madame C. Audiguier, Putney George, Lady Margaret, and Fleur de Marie. The last two, with La Marguerite, are in most demand among the Anemone-flowered section. Putney George is a good variety for selling, as the colour is very effective, and the shape and form somewhat unique. Cullingfordi is the most extensively grown crimson, and a market grower's collection can scarcely be said to be complete without it. The public taste would appear to be a little difficult to please in the matter of crimson Chrysanthemums. Probably the majority of buyers prefer shades of pink, yellow, or white, and nothing but a very superior form of crimson will tempt them. I have seen other varieties of this type tried, notably Edouard Audiguier and Mons. Bernard, but they failed to establish their position. The foregoing include most of the leading varieties in use by the market grower, excepting the late flowering ones. In thus indicating the principles which govern the market supply, I am aware that I have not compiled an entirely complete list. Nor is such a list possible, for individual taste and local considerations cause a wide divergence of opinion in selection and culture. Many growers show a preference for the incurved varieties, but the Japanese are the principal favourites. Before I leave this part of my subject I should add Avalanche, Peter the Great, Golden Thread, and Mrs. J. Wright.

Late Chrysanthemums secure good prices, and they are in brisk demand previous to Christmas. Ethel and its yellow sport Mrs. Jones are capital for furnishing a late supply. Princess Teck is also useful in this respect. The apricot-coloured Golden Gem, Mrs. C. Carey (white), and Hero of Stoke Newington (pink) are other good late sorts. To these may be added Meg Merrilies and its yellow sport Ralph Brocklebank. The two last named are generally grown, the one failing, as far as I can see, and which is common to both, being an extreme partiality to mildew. Singles are represented by Admiral Symonds and Pompons by Snowdrop and its yellow sport.

New varieties have generally ceased to be such by the time they reach the flower market. A market man near me grows Louis Boehmer and Ada Spaulding, but I think such is exceptional. If I were inclined to prophesy I should not find it difficult to predict that Beauty of Exmouth and Colonel Smith will eventually be utilised largely for the purpose under consideration.—ENFIELDIAN.

## DISCUSSION ON APPLES.

### TOO MANY VARIETIES.

"J. A. W." (page 500, last vol.) is right in saying there are too many varieties of Apples in cultivation, but has he not himself given too long a list of those "we really cannot do without?" Soil and situation are important factors in the question, and with many sorts it is difficult to say without trial whether they will suit the locality. It seems to be a good plan to try a variety of sorts at first. If good fruiting pyramids on Paradise are planted, and carefully attended to, two or three years will generally give a good idea of what will be the successful sorts to plant in larger quantities. It is a great pity to make a mistake and plant sorts which will not answer. Another point is this: With the present "boom" in Apple-planting, it seems likely that in a few years Apples will be very cheap up to January, and I prophesy that many persons will heartily wish they could change their October and November trees for others with the keeping powers of Bramley's Seedling, Lane's Prince Albert, or Wellington. It is the man who has a good Apple room still fairly stored with sound fruit in March who begins to feel paid for his labour and expense.

### DR. HARVEY.

The same correspondent is quite right as to Dr. Harvey. Throughout the large county of Suffolk it is one of the best known Apples, and for a non-keeper a very good one too. It is generally best to go in for the local Apple, as well as the local breed of cow or sheep in a district, not only because they are more ready of sale as better known, but also because it is generally a case of survival of the fittest, and the result of accumulated experience. We have just finished two or three sacks of Dr. Harvey to the satisfaction of all concerned; every fruit was good, of uniformly good size, and capital for all cooking purposes. The tree is easily distinguished at some distance, as it has often a semi-weeping habit, and in many cases a single fruit hangs on the end of a slender shoot almost like a golden ball of a pendulum. I wonder they are not more knocked about by wind than they are.—W. R. RAILLEM.

### A PLETHORA OF VARIETIES.

A MOST important subject has been opened up under the above heading, and I endorse most of the remarks of Mr. J. Watkins, page 533.

There appears to be an erroneous opinion as to the number of varieties of Apples that are grown for market in the United States and in Canada. I have heard it stated many times that only a few are grown, but in a list before me of Apples consigned to a large firm in Liverpool I find over sixty distinct varieties; and in another list, received a short time ago, over eighty varieties were named. This does not include many barrels marked as samples and unnamed.

Much has been said about our imitating American growers in marketing our Apples. The only thing I see worth copying is the care in grading. The fact that many barrels are described as "slack" or "slack and wet" indicate something wrong. No doubt the enormous importations of Apples lowers the value of home-grown produce; but it is an absolute fact that good home-grown Apples, honestly packed and properly graded, will realise more than the best American fruit from the market point of view.

I thought the collection of Apples staged by Mr. J. Watkins the most instructive and interesting in the Hereford Show. The twenty-five varieties were all suited for market in the majority of districts, and it would be very difficult to state which evoked the greatest interest—the market, culinary, dessert, or best flavoured dessert collection—each one having a group of specially interested people round it. This being the case, I fail to see how the increasing numbers of varieties are to be reduced. Personally, I would not plant more than half a dozen for market, but there are hundreds who plant Apple trees for their own pleasure or table, and they also like to test varieties for their own gratification. Again, some kinds of Apples which fail or are very inferior at one place, are just the reverse at another. As a case in point, the Northern Spy will scarcely grow or fruit here, yet it does well in other districts, as proved by some grand dishes of it at Earl's Court Exhibition. Lady Henniker is far from good here, but it is a splendid Apple in many places. I could name many others which behave in the same manner. I think it would be a great mistake to generally condemn any variety for the reason stated.—S. T. WRIGHT, *Glewston Court, Ross.*

### APPLE NORTHERN SPY.

THE fruits of the above which I exhibited at the Aquarium, and referred to by "A. D." (page 500, last vol.) were grown as he thought on an ordinary bush tree on the Paradise stock. The tree is growing in a very exposed situation, and the soil is a stiff cold clay. It has been planted twelve years, but like the trees of Blenheims planted at the same time had not produced a crop until this season. Providing the tree continues to bear it must be valuable for late use, as at the present time the fruits are as firm as when gathered. A friend who spent two years in Canada told me that it is one of the best sorts grown out there. American Mother, which is considered delicate and often advised to be grown in a warm situation, also does splendidly here in the above soil.—T. TURTON, *Maiden Erlegh, Reading.*

### THE COBHAM APPLE.

I HAVE been much interested the past few weeks to see that this grand Apple has not been forgotten among so many newer names, and it may be good sorts, to cultivate. Some years ago, it may be eight or ten, the name of Cobham must have become familiar to all readers of the Journal from my sending samples to the Editor to be named, the local name being "Improved Blenheim" and "Orange Blenheim" as distinguishing it from Blenheim Pippin, or Blenheim Orange. Since that time I find the variety is more commonly met with than was supposed by me at the time of writing, but that the crops are not distinguished by growers and dealers from "Blenheims," although undoubtedly a superior Apple. On reading the editorial reply to "J. T., *Fifeshire*," on page 495, I compared the description from the "Fruit Manual," and my crop this season (a poor one) and the Apples exactly corresponded.

I grafted some on a Hanwell Souring at about the time referred to, but the crop is not so fine flavoured or so saleable in appearance, partaking, I imagine, somewhat of the parent stock of the Souring, thus confirming in my opinion the interesting experiments made by Mr. Harrison Weir many years ago on the difference of stocks and the results obtained in the colour and flavour of the crops, a subject well worthy of studying and carrying out in these times of keen foreign competition. I met with a quantity of the true Cobham Apples in a fruit shop in this village some months ago, and I found they were being retailed at the low price of 2d. per lb., better fruit, I consider, than any American Apples I have seen there or at home.—J. HAM, *Astwood Bank, Worcester.*

### FROGMORE PROLIFIC.

I THINK that this Apple should not be allowed to fruit the first two years after planting. I planted five standards of this variety in November, 1881; the following autumn the young trees were loaded with fruit, and I left them all on "out of curiosity;" consequently the next year I had no fruit, and three out of the five died, while the two remaining ones had to be pruned back hard branch and root, lifted and replanted; three years were thus lost.—J. A. W.

### CELLINI.

THIS is an excellent and showy Apple, but, as "R. M., *Newbury*" (page 501, last vol.) writes, subject to canker on strong stiff land. All my standards on the Crab stock produced cracked fruit, but the pyramids on Paradise stock growing on the same soil produced splendid fruit without a sign of cracking.—J. A. W.



## NEW VARIETIES OF APPLES.

It is satisfactory to find that the Fruit Committee of the Royal Horticultural Society is exhibiting more than ordinary caution in the granting of certificates of merit to new Apples. In relation to a couple exhibited at a recent meeting, and found to be the best of the numerous seedlings submitted, it was agreed that the trees should be as it were interviewed by someone deputed by the Committee for that purpose. This is some satisfaction. It is very evident that there are very many Apples in the country, seedling or unnamed, the which are heavy croppers and passably good in quality, but yet are far behind our best named varieties. Still, those who have these unnamed sorts seem to assume, possibly through ignorance of what is really good in Apples, that they have some of superior excellence. When, however, these come before the Fruit Committee few indeed are regarded as meritorious. Only something exceptionally good can now hope to find a select place in the great roll of named and useful Apples.—D.

## QUORN HOUSE, LOUGHBOROUGH.

AMIDST the stillness and grandeur of the renowned forest of Charnwood, and only a few miles from the thriving little borough of Loughborough, may be found the historic village of Quorn, the home of the celebrated Quorn hounds, and situated in a central position in the parish is the delightful residence of W. E. J. B. Farnham, Esq., Quorn House. This is a singularly beautiful place, where gardening is most successfully practised in all departments. The grounds are beautifully undulated and well timbered. Standing near the lake in proximity to the mansion we appear to be far removed from every road, from every cultivated field, and from every village where the hum and stir of life may prevail, and the silence would indeed be oppressive but for the beauty about us. A clump of Cypress near by cut the sky with their feathery boughs, and their pointed tops had a golden smile upon them. We speak of the golden autumn as though all the leafage were of one colour, but in reality scarcely any two trees were alike. From the deepest russet to the palest gold, they presented themselves in that variety which is so charming. Amidst an avenue of Chestnut trees, one still lingers in the mind by its brilliant leafage, an ancient Oak, with limbs wonderful in their massiveness, and clothed from head to foot with golden leaves, and besides him his fellow, with form as massive, but with every leaf and acorn fallen upon the mossy surface beneath. In the distant forest glade, Oak after Oak, Beech after Beech, luminous and lovely, caught the eye, and stretches of tall silvery Birch appeared as a mist to complete the picture.

We turn with some reluctance from this delightful scene, and cross the wide expanse of well-kept lawn to the right and left of the mansion, each point being richly studded with fine examples of shrubs and deciduous trees of great rarity, and a noble carriage drive brings the visitor to the kitchen garden, with its colony of glass houses, in which many splendid examples of skilful culture are worthy of description. A well constructed span-roofed house, about 60 feet by 25 feet, is entirely devoted to the culture of *Nepenthes*, which bear every indication of careful culture, hundreds of well-pitched plants being suspended from the roof, evidently enjoying the humidity of the atmosphere produced by the ornamental tank, which extends along the entire length of the house. Amongst the most noticeable varieties are *Nepenthes Chelsoni*, *N. Findleyana*, *N. Hookeri*, *N. Rafflesiana*, *N. Mastersiana*, *N. robusta*, *N. Williamsi*, *N. Sedeni*, *N. sanguinea*, *N. Veitchi*, *N. coccinea*, and *N. hybrida*, each heavily laden with robust pitchers. The tank is planted with several varieties of *Nymphaea*, very noticeable being *Nymphaea odorata* and *N. dentata*, with their lovely sweet-scented blossoms floating upon the surface of the waters. An ornamental fernery occupies the extreme end of the house, from which a constant flow of water is obtainable, and is constantly dripping amongst the Ferns.

From this house we enter a long range of fine structures devoted to the famed collections of Orchids. The first division is occupied with some well grown *Odontoglossums* in various sizes. Many of the plants were throwing up strong flower spikes, and some fine varieties of *Odontoglossum Rossi majus* were in flower. A noticeable feature is that the side stages are thickly coated with sphagnum, in which the smaller plants are plunged. In the next division of this range are the *Cattleyas*. Many of the varieties are now showing their flower stems, and much beauty is promised. On the side stages were some highly coloured varieties of the beautiful *Cattleya aurea* and *C. Mendeli*. It is in this house where that magnificent plant of *Cattleya alba* (Quorn variety) which was recently certificated by the R.H.S. is grown, it apparently being in the best of health. We are next led into the *Dendrobium* house, in which there are many specimens in a high state of cultivation, the varieties being far too numerous to describe in an article of this description, but it is worthy of notice that the specimens of *Dendrobium Wardianum* are remarkable for their immense growth, in many instances measuring over 5 feet in length, the earliest now showing immense numbers of flowers. Other houses are devoted to the culture of Orchids. One house contains a large number of *Calanthes* in fine order, another is required for *Cœlogyne*, *Vandas*, *Masdevallias*, *Cypripediums*, *Lælias*, *Oncidium*s, and the beautiful *Cypripedium Spicerianum*, all flowering freely, and some pretty examples of the curious *Peristeria elata* were in flower.

The vineries and Peach houses are numerous and well-built structures. In the late vineries there were hanging many splendid bunches of well-

finished Gros Colman, Gros Maroc, Lady Downe's, Black Alicante, and Muscat of Alexandria, all admirably finished, and the berries are an immense size. Peaches, Tomatoes, Melons, and all the good things necessary for the supply of a large establishment are well grown. Several useful span-roofed houses are devoted to a general collection of finely grown stove, greenhouse, and other plants in great variety. Mr. Cooke, the talented gardener and general manager of the entire estate, is to be congratulated on the efficient manner in which he has planned and carried out the many improvements that are visible on every hand.—J. H. WALKER.

## TOMATO LADY BIRD.

AS a visitor to the Royal Horticultural Society's meeting on October 18th, 1892, I was much interested in a dish of a Tomato named Lady Bird, shown by Mr. W. C. Leach, The Gardens, Albury Park, Guildford. To me it appeared an excellent late variety, and justly deserved the first-class certificate awarded it. The fruits exhibited were handsome in appearance, and were said to possess an excellent flavour. I am told, too, that the variety is a very free setter, producing heavy crops of fruit under favourable circumstances. No doubt this



FIG. 3.—TOMATO, LADY BIRD.

Tomato will be extensively grown if you brought it to the notice of your numerous readers.—W. G.

[We described this excellent variety in the *Journal of Horticulture* for October 20th as a promising "Tomato for the million." We have now pleasure in publishing an illustration of it (fig. 3). In Messrs. J. Veitch and Sons' seed catalogue for the current year the raiser describes it as "setting freely and producing large clusters of unique fruit of medium size, nearly round, quite smooth, flesh of great depth with very little seed, and of deep crimson colour."]

## CANKER ON FRUIT TREES—IRON IN SOILS.

ALTHOUGH the data given by Mr. Kruse, on page 564 last week, as to his soil, in which there is much canker on fruit trees, are very full, it is difficult to express a definite opinion as to the treatment necessary to remedy the defects. The analysis he gives must be an old one, for the Dr. Voelcker referred to has been dead many years; and under any circumstances it may be a false guide, as no chemist is capable of defining what proportion of the several constituents of a soil is soluble and in a condition to be assimilated by plants, therefore there may be deficiencies not appearing in the analysis; and since the date of this analysis, as Mr. Kruse informs us, the soil in question has had regular applications of manure (mostly from horse stables), and also yearly applications of chloride of sodium, and recently of nitrate of soda. However, on the face of the analysis there appears an insufficient supply of soda, potash, and phosphoric acid.

A wide impression prevails that too much of the oxide of iron may be the cause of canker, but the proportion in the soil in question is by no means large, as some of the most fertile soils of which analyses have been published contain more than 10 per cent. of that constituent,



generally in the form of the peroxide. If my memory serves me correctly the soil of the fertile orchards of Herefordshire has nearly as large a proportion, therefore it is scarcely probable that the presence of iron oxide is the cause of the mischief.

Iron in such a form as to be capable of assimilation by the plant is absolutely necessary for its growth, therefore it may be that the soluble sulphate may supply a deficiency. Dr. A. B. Griffiths in his treatise on manures (London, 1889) records a number of successful experiments in its use, and I strongly recommend Mr. Kruse to study his book. The "Aschen Analysen" of Dr. Emil Wolff (Berlin, 1871 and 1880) is the great storehouse of plant analysis, but much that is useful on the same subject may be found in "How Crops Grow," by S. W. Johnson (New York, 1880).

From the analysis contained in these books it appears that the Apple requires a large supply of lime and soda and a full proportion of phosphoric acid, potash, and magnesia; therefore, I can only advise that the land be dressed with a manure compounded of superphosphate, potash, magnesia, and gypsum. I should have added soda if the soil had not already been regularly supplied with that element, and I think that sulphate of iron at the rate of from half to one hundredweight per acre might be added with advantage.

The Apple trees in my own garden treated in a similar way have ceased to canker, the only signs now present of the disease being scars of old wounds. I believe canker to be a disease of mal-nutrition resulting from deficiency in the soil of what is required by the tree, and not from the presence of anything injurious to its growth.—E. TONKS.



#### HARDY FRUIT GARDEN.

**Winter Cleansing Fruit Trees.**—The importance of thoroughly cleansing the stems, branches, and surroundings of fruit trees during the winter months is often overlooked. There are many enemies of trees which can only be successfully extirpated during the dormant season, when greater efforts can be put forth and stronger remedies applied to effect their destruction. Therefore, where many of the worst and most persistent of these pests are only too glaringly apparent, now is the time to attempt an effectual and complete riddance. Washes, insecticides, and solutions of various kinds are great aids in freeing trees of many evils, and rightly applied, with the necessary patience and perseverance, they assist the cultivator to cleanse trees readily and expeditiously.

**American Blight.**—When trees are infested with this unsightly pest it is sometimes difficult to eradicate it. The white, cottony substance which conceals the insect gives, in badly infested cases in the course of time, a most obnoxious appearance to the trees. The bark becomes contorted, and there is an absence of that clean and healthy freshness which trees in vigour and fertility display. In such cases there is also the danger of the pest attacking the roots, which it often does with the same malignity with which it infests the branches and stems. To some it is known as American bug, but though it has a great resemblance to the mealy bug so troublesome to plants under glass, it is totally different to that insect, which belongs to the scale family, the American blight being really an aphid, and is known as the woolly aphid. The insects, when crushed, stain the fingers and their downy covering with a red or pink colour.

**Remedies.**—One of the best remedies for the above is the application of paraffin or petroleum. The least touch of this mineral oil means death to the insects. Its use, however, demands care, as it is not safe to apply it so freely that it runs down the stems to the roots. The best plan of using it is to procure a clean but stubby paint brush, and dip it in a vessel of the raw oil; shake the brush sufficiently, so that none of the oil drops quickly from the bristles; then work the brush into the crevices of the bark, and the insects will be destroyed. This is an easy and very effectual method of destroying the pest on slightly attacked trees. On larger trees, however, and those almost completely infested all over readier means must be adopted. In the first place dislodge as much of the aphid as possible with a garden engine. It is easily moved from the younger branches when a sufficient force of water can be delivered. This preliminary washing can then be followed by a petroleum emulsion, which is made by boiling a pound of softsoap in a gallon of water, then adding three more gallons of water and four wineglasses full of petroleum, thoroughly mixing the oil and softsoap solution with a force pump for several minutes. Distribute this solution over every part of infested trees, using it while the buds are dormant at a temperature of 120°. The stems and branches, which can be easily reached, may be well brushed with the solution; also the strongest roots if attacked, and their exposure can be effected by removing the soil for facilitating the operations.

**Scale.**—Apple and Pear trees are most frequently infested with this kind of insect. Scale may be exterminated by scraping the infested parts, and thoroughly scrubbing with a strong insecticide. Encasing the infested stems and branches in a coating of ice, by syringing the trees with water in frosty weather, is a means of freeing them of scale,

which leaves the branches along with the ice when the latter melts. The upper parts of trees if infested may be sprayed or syringed with the hot petroleum emulsion recommended for American blight, and the lower parts thoroughly brushed with the same emulsion. A strong solution of Gishurst compound may be used either with or without petroleum, and it will be found effectual in destroying both scale and American blight.

**Moss and Lichen.**—These are very troublesome in some districts, especially where the situations devoted to fruit culture are damp and wet, owing to atmospheric conditions or badly drained ground. Drainage helps their disappearance; but in the majority of cases it is necessary to destroy them by the application of some drastic remedy. Moss and lichen are not only themselves injurious to the trees but they harbour insects; therefore the sooner they are removed the better. Very rank infestations should first be partly cleared by scraping off the thickest portions. The trunk and main branches may be readily cleared by washing with hot lime or brushing them with brine. To coat the upper and smaller branches with limewash or to paint with brine is out of the question, but if infested with moss and lichen they must be cleansed by some means; and finely powdered newly slacked lime distributed over the trees is a good remedy. Choose for this operation damp or foggy weather, the branches then being thoroughly wet on all sides. Mounted on a ladder as high as necessary, it is easy, by a few removals, to effectually cover every branch with a thin coating of powdered lime, which will readily adhere to their moist surfaces. That falling to the ground acts beneficially, so there is not the slightest waste. Limewash strained sufficiently fine so that it will pass through a syringe is another method of coating branches out of reach, and may be adopted with advantage in cases where the other method is not applicable. The lime acting on the moss and lichen growths will soon destroy their vitality, and repeated cleansings of the wood with a good force of water from a hose-pipe will restore the trees to their original healthy vigour and fertility.

**Aphides.**—Every fruit grower knows how troublesome these insects are in summer to Peaches, Nectarines, Apricots, Plums, and Cherries, especially on walls. Though not apparent now on the trees, it is possible that colonies of eggs are lurking in crevices of old bark, among the folds of dilapidated nail shreds, and in holes and crannies of the brickwork of badly pointed walls. As the pruning operations are duly completed, and all useless wood removed, it is advisable to thoroughly wash the walls with hot water, soap, and petroleum mixture, and to syringe every part of each tree with the same. If it is found necessary to be more precise and careful in cleansing the wood, then paint the trees with a brush, adding to the solution a little sulphur, which will help to indicate the progress of the operation by colouring the wood. Sulphur is also good as a deterrent of insects. In painting the wood operate upwards, so as to avoid the possibility of damaging valuable buds. Remove all old shreds and ties. Have the walls repointed where found necessary, and carefully refasten the trees with fresh material, using something of a strong enduring nature for the main branches.

#### FRUIT FORCING.

**Peaches and Nectarines.**—*Earliest House.*—The trees started at the beginning of December are now in flower, and if in proper condition there will be no difficulty in securing a good set of fruit. The temperature should be steadily maintained at 50° by day in dull, cold weather, 55° when mild but dull with a gentle circulation of air, increasing the ventilation with the sun heat to 65°. On mild nights the temperature may be 45° to 50°, with a little air, but it may fall to 40° on cold nights. Avoid damping in very cold sunless weather, as a moderate moisture suffices. In bright weather the floor or border may be sprinkled in the morning, also early afternoon, and the soil should be thoroughly moist. Insure the distribution of the pollen by shaking the trees after the house has been ventilated a short time. A camel's-hair brush or a feather, or a rabbit's tail mounted on a small stick and drawn over the blossom when the pollen on the anthers is ripe and applied to the stigma of each flower, always secures a good set in perfect flowers. Where there is a deficiency of pollen take it from those varieties that afford it plentifully, as the Early Albert or its race, Early Louise and Early Leopold, also Royal George and Stirling Castle Peaches; of Nectarines, Elruge always supplies abundance of pollen. Carefully impregnate the blossoms when they are fully expanded.

*Second House.*—If this house contains trees of Alexander and Early Louise Peaches and Advance Nectarine, the fruit will be ripe early in May; if Hale's Early, Stirling Castle, or Royal George Peaches, and Lord Napier Nectarine, the fruit will not be ripe until the end of that month, while Elruge Nectarine will not ripen until the middle of June. Hale's Early is not a good setter early forced, but pollen can be taken from Stirling Castle or Royal George, and Elruge serves the same purpose to Lord Napier. A succession of fruit can be had over two months by having all the varieties in one house, but it is not a good system, it being better to have two houses, one with the first named, Alexander and Early Louise Peaches and Advance Nectarine, the other containing the last mentioned, Hale's Early, Stirling Castle, or Royal Peaches, the last having the finest fruit, Lord Napier and Elruge Nectarines, and start both houses together. The house having been closed, as advised in a former calendar, fire heat may be used to maintain a temperature of 50° by day, and 40° to 45° at night, allowing it to rise to 65° by day with sun heat, accompanied from 50° with plenty of air, and there must not be any attempt at husbanding the sun heat at this stage, for a close atmosphere is fatal to the blossom. Sprinkle the trees on fine days in the morning and afternoon until the flowers



commence to open, when the sprinkling of the floor in the place of the trees will be sufficient. The inside borders must be rendered thoroughly moist by repeated waterings. This applies to houses with fixed roofs, for, where the trees have been exposed, the borders will have been so moistened by the rains as not to require watering until the foliage and fruit are well advanced in growth. If the roots are partly outside, that part of the border should be covered with leaves and litter, so as to keep the roots in a condition to absorb and transmit nourishment, which they cannot do when the soil is frozen.

**FIGS.—Early Forced Trees in Pots.**—Those started in November or early December will need the temperature raised gradually to 60° at night, but 5° less in severe weather, and 65° by day from fire heat when the growths are developing, with 70° to 75° from sun heat, commencing to ventilate at 70°, and closing at 75°. Avoid, however, a high temperature by artificial means, as the sturdier and shorter jointed the young shoots and the stouter the leaves can be kept the greater will be the chances of a satisfactory first and second crop. Syringe the trees twice a day, except in dull weather, when damping in the morning and early in the afternoon will be sufficient, or less moisture will be needed where the fermenting material aids in furnishing heat than where reliance is placed solely on fire heat, and avoid a saturated atmosphere in dull weather. As the fermenting materials settle firm them well about the pots, and add more, taking care that the heat about the pots does not exceed 70° to 75°. Place some turves, about 2 inches thick, grass side downwards, around the rims and on the surface of the pots, extending inwards about 2 inches, so as to form a dish, and outwards over the sides towards the fermenting materials with a view to encourage the surface roots to extend. Water the trees and turves with weak liquid manure, and the whole surface will soon become a mass of roots; and they may then be fed to any extent with liquid stimulants, or a sprinkling occasionally of superphosphate (bone) five parts, nitrate of potash two parts, and gypsum one part, mixed, and kept perfectly dry can be applied.

**Fig Trees Planted in Borders.**—The first house of these should now be started, and the fruit will be ripe towards the end of May or early in June, when the varieties consist of White Marseilles and Brown Turkey, the best light coloured and dark Figs for general purposes. The borders should be brought into a thoroughly moist condition by repeated waterings, but not going to the extreme of making them sodden. Syringe the trees in the morning and early afternoon when fine, otherwise only damp the floor and other available surfaces so as to maintain a genial atmosphere, for one that is close and damp has a tendency to induce soft growths and is unfavourable to the first crop fruit. Maintain a night temperature of 50°, 55° by day artificially, and allow an advance to 65° from sun heat with a free circulation of air.

**Cherry House.**—Where the house has been closed since the middle of December and frost excluded, fire heat may be applied to secure a night temperature of 40° when cold, 45° when mild, and 50° by day, allowing an advance of 5° to 10° from sun heat, but not without a free circulation of air at 50°, and admitting it abundantly in mild sunny weather. Syringe the trees occasionally, but do not keep them dripping with water, and take care that they become fairly dry before night. The roof lights having been off, the borders will not need water for some weeks to come, yet the soil must be kept in a well moistened condition. Trees in pots must be regularly attended to, not allowing the soil to become dry, but afford a supply of water when needed. If any of the trees are unsuitable, now is a good time to introduce new ones in their place. Trees that have been grown against and trained to a south wall for three or four years and lifted occasionally are the best. Early Rivers, Black Tartarian, Governor Wood, and Elton are suitable varieties. If the May Duke flavour is required Empress Eugénie will supply it, and this is a very fine variety for forcing.

**Melons.**—Plants raised from seed sown now will give ripe fruit by the end of April or early in May in light and well heated structures, not otherwise, and contingent on the weather being favourable to their growth. The seed should be sown singly in 3-inch pots half filled with fine loam and leaf soil, plunging the pots in a hotbed made of fermenting materials and covering them with a pane of glass, which must be removed as soon as the plants appear through the soil. Where there is no bottom heat the pots may be placed on shelves about 1 foot from the glass in a house with a temperature of 60° to 65° at night and 70° to 75° by day artificially, as in a fruiting Pine stove or a Cucumber house, with a piece of glass over each; and in this case the plants will be hardier and sturdier and less liable to suffer from damp than those in a hotbed. When the seedlings have made an inch or two of stem they should be top-dressed with warmed soil and kept well up to the glass or in plenty of light, so as to insure a sturdy growth. Varieties are plentiful, every grower has the best that indulges in cross-fertilisation, but good sorts adhere to types. Scarlet Gem is a standard for flavour, and Blenheim Orange with Read's Scarlet-flesh have it in larger fruit. Pine Apple (American Musk) and Egyptian have never been excelled in flavour; there is some of one or both in Davenham Early, Gilbert's Victory of Bath (an improved Bromham Hail), Hero of Lockinge, and The Countess. The Persian race have a remarkable tender flesh and a thin rind and a flavour that never cloy. Some of this "blood" has got into The Countess, and we have the old Beechwood flavour in Eastnor Castle; the Cashmere Melon characteristics being well developed in Cox's Golden Gem and in Longleaf Perfection. All are good Melons.

**Cucumbers.**—Seed must now be sown to raise plants for the early spring supply of fruit. There is none better than a carefully selected stock of Telegraph as an all-round variety; Cardiff Castle is smaller and

more prolific. We have a cross between the two, and none other will be eaten at table, but it has a long neck, and is therefore of no use for exhibition. There are many excellent varieties, the Sion House race being victorious along the whole line for cropping and using qualities, and the Long Gun bred for exhibition purposes. The seeds may be sown singly in 3-inch pots, in a rich light mould, leaving room for top-dressing the plants when they require it; plunge the pots in a brisk bottom heat near the glass, and cover with a pane of glass, which must be removed as soon as the plants appear. Where there is not the convenience of a hotbed, the pots may be stood on a shelf near the roof covered with a pane of glass, and in a genial atmosphere, with a night temperature of 65° to 70°, 5° less in cold weather, rising to 80°, 90° or more with sun; ventilate a little at 75°, but be careful to prevent a check by sudden cooling or drying of the air.

## THE BEE-KEEPER.

### APIARIAN NOTES.

THE severe weather experienced at Christmas when the thermometer registered 9°, and on the following day 7°, or 25° of frost, was followed by the densest fog ever experienced in this locality. At the time of writing, however, it is milder but still frosty. Although the frost was unaccompanied by snow, flowers and vegetables are so far very little affected.

Bees have had nearly two months of almost arctic winter, but the atmosphere has been drier than we have usually experienced at this season, consequently the bees have wintered well, and as they are more likely to suffer in December than further on, we consider them safe, provided they lack nothing, and are free from moisture.

Breeding has commenced in many hives having youthful queens. The cluster will expand, and a greater heat kept up, which enables the bees to resist a very low temperature, should it come on unexpectedly.

Entrances will not be interfered with until the bees make an effort to enlarge them; and even after that we may again contract them to their normal winter's width, which in no case exceeds 1 inch, some of them half of that. Our hives have an immunity from dead bees on the floor, the result of small entrances and the absence of damp. We do not require to clean floors, nor use a "hooked wire" to clear out the bees that "died from old age," nor do we see a single speck of evacuated matter on any one of our hives.

I am interested in a weak hive, which will elucidate a matter of no little importance on the wintering problem and general management. It has a queen of the normal length, but less in girth by a third than the average queen. Started with less than a hundred bees on the 1st of August, and supplemented with about 300 cells of ripe brood, the bees were fed sparingly till the middle of November with 9 lbs. of sugar. The hive is in a healthy state, and I have observed one dead bee only from it. The bees occupy two divisions of a Lanarkshire hive, and which has a very small entrance. Had these bees an entrance of 3 or 4 inches probably they would have been all dead from "old age," so we prefer keeping them young and alive.

When floors are unventilated cleansing them should not be delayed. Fixed floors should not be tolerated by those having the welfare of the bees at heart. January has never failed to give us several days for such operations or to feed hives short of stores.

Where quilts are used they should be examined, and if damp removed, fresh dry ones being substituted. Where dried grass is used the task is unnecessary.

Dysentery results from damp or a draught, and both of these hinder breeding, and are direct causes of unprofitable hives. The queens of such hives are liable to disease, and although young bees are not brought forward eggs are proportionately deposited as if they were.

### TWO QUEENS IN ONE HIVE.

The following is an extract from a letter I received about the time the subject was sprung upon the public as "new." "I was much surprised on reading the B.K.R. that 'W. B. C.' claims the idea a new one. I sent you some time since specimens of the frames I had from you nearly thirty years ago, calling your attention to similar frames being patented in England by ——. The hives these frames were from were also intended for two queens, and your instructions accompanying them say distinctly the side extension is for working two queens in one hive if desired. It astonishes us hereabouts that an Editor could so commit himself and mislead those of his readers who did not know better."

### SEVERE WINTERS.

These have not the terror with us for the safety of our bees they had long ago, and hives made specially for that purpose were



too cumbrous for moving about. It is a much better plan to winter stocks singly and unite brood, bees, or both at the proper time. Further hints will be given in subsequent articles, meanwhile wishing a profitable and Happy New Year to all.—A. L. B. K.

THE TITS AND THEIR HABITS.

I CANNOT say that I have observed any of the tits injuring fruit buds here. I am sorry to say, however, that I must agree with those who state that they find *Parus major* eat their bees. I have seen the large tit station itself at the entrance of the hive and pick up the bees as they emerged. This is in spring, and I have stood watching and rather admiring the little bird's dexterity. I have no doubt our worthy friend "A. L. B. K." will hardly approve of my indifference to the destruction of the bees. I fear, however, that I prefer flowers to bees, and would have been in a different frame of mind had it been the former which were attacked by the tits. I asked a local bee-keeper, who is in addition a great observer of birds, if he had seen the tits eating bees. He said, "Yes, every spring." It was always the large tit he had also seen.—S. ARNOTT.

TRADE CATALOGUES RECEIVED.

- Biddle & Co., Loughborough. — *Flower and Vegetable Seeds, Bulbs, &c.*
- G. Bunyard & Co., Maidstone, Kent.—*Vegetable and Flower Seeds.*
- W. Cutbush & Sons, Highgate, London.—*Flower, Vegetable, and Farm Seeds, and New Chrysanthemums.*
- E. P. Dixon & Sons, The Yorkshire Seed Establishment, Hull.—*Vegetable and Flower Seeds and Choice Chrysanthemums.*
- Dobie & Dicks, 66, Deansgate, Manchester —*Price List of Seeds.*
- H. J. Jones, Rectcroft Nurseries, Hither Green, Lewisham.—*Chrysanthemums.*
- W. Paul & Son, Waltham Cross, Herts.—*Seeds and Garden Sundries.*
- R. Veitch & Son, High Street, Exeter.—*Kitchen Garden and Vegetable Seeds.*



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications

**National Chrysanthemum Society's Catalogue (H. R.).**—We think the best way in which we can help you will be by forwarding your letter to Mr. Richard Dean. There appears to have been an oversight, accidental we are sure, or perhaps the Secretary is waiting the publication of the new issue before writing you on the subject.

**Chrysanthemum Cuttings (W. G. S.).**—If you wish to retard the growth of cuttings you had better plant out the stools after the frost departs in a cool position in the garden. Cuttings of low growing varieties inserted in May, June, or July make useful dwarf decorative plants. If severe frost occur after planting, spread some litter over the ground. The stools should be prepared in a cool frame.

**Gloire de Dijon Rose in Greenhouse—Tuberoses—Cutting Down Duchess of Edinburgh Clematis (Hittite).**—1, The Rose could only be expected to develop its buds or make growth in a temperature of 45° to 55°, but there will be no harm in that if the house is not kept very close. A temperature of 40° to 45° at night and 50° by day, with a free circulation of air above that point, would have been more suitable; but it would not now answer to lower the temperature, as that would check the growth and probably cause the buds to drop, therefore keep as at present—it will give you flowers earlier. 2, The Tuberoses should be gradually withdrawn from their position on the hot-water pipes after they have started into growth and before they become drawn, placing them on the greenhouse shelf, but not where draughty, or they will be stunted and fall a prey to red spider. They were started too soon. 3, Duchess of Edinburgh Clematis is of the Florida type—blooming from the previous year's ripened wood from June to July (outdoors), and is useful for conservatory decoration. The pruning of the plant in your greenhouse now may be done; it consists in the removal of all weak wood; a portion of the old flowering

wood should also be shortened to near the base, so that young growths for the following season's bloom may be secured, but a sufficiency of flowering wood for the current year's blooming must be retained—the best and strongest. The variety has pure white flowers, sweetly scented.

**Plants in Vinery (Somerset).**—We should not lower the pit, unless for tall plants, as the nearer plants are to the light the better. Stout boards would make a very good stage for such a place, be useful for standing upon in thinning the Grapes and otherwise attending to the Vines. Camellias do fairly well in vineries, standing them outdoors after the buds are set and housing them at the end of September. *Alba plena*, C. M. Hovey, *Lavina Maggi*, and *Mrs. Cope* are good varieties. *Azaleas* would flower in the spring; *Deutsche Perle*, *Jean Vervaene*, *Kaiser Wilhelm*, and *Vesuvius* are fine varieties. Of smaller plants you may have *Epacris hyacinthiflora*, *The Bride*, *Vesuvius*, and *Lady Panmure*; *Libonia floribunda*, *Coronilla glauca*, *Primula sinensis*, *Sparmannia africana*, *Vallota purpurea*, and other plants; but they will need considerable moving about so as to meet their requirements, as no flowering plants will succeed beneath Vines in full foliage. Ferns, ornamental-leaved *Begonias*, and *Palms* are suitable for vineries in summer.

**Aleyrodes (T. C.).**—The following note from Mr. Iggulden exactly answers your question:—The white fly on Tomatoes is almost as much to be dreaded as fungoid diseases, a bad attack completely paralysing the growth of the infested plants. Unfortunately the remedies for getting rid of this pest have a most prejudicial effect upon the flowers, and ought therefore to be applied and persevered with before the plants are far advanced in growth. As far as many market growers are concerned, a thorough clearance of Tomato plants from the place, all being burnt, and the houses filled with strong fumes of sulphur, will usually get rid of the *Aleyrodes*, what few that do escape being easily kept down by means of a sulphur dressing on the hot-water pipes. Syringing the plants with a rather strong solution of carbolic soap has been found a fairly good remedy, but must be persevered with to be quite effective. So also are frequent fumigations with tobacco paper. One or two fumigations are not enough, this not greatly injuring the eggs and partially developed insects to be found on the under side of the leaves. All things considered nothing answers so well as sulphur fumes generated with the aid of hot-water pipes. Mix flowers of sulphur with either milk or linseed oil, and paint the flow-pipes with this. Whenever it is necessary to fire rather hard in order to keep out frosts or to prevent the temperatures falling rather low, the fumes will be given off strongly, and also during a spell of bright sunshine coincident with a brisk heat in the pipes. Two or three sulphur dressings should be given during the winter, and the chances are not a fly will survive till the spring. Better run some risks of the loss of a few flowers than the greater one of the plants being smothered by the "honeydew" of the white fly and the certain depreciation in the weight of crops produced.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (T. K.).—*Lælia autumnalis atro-rubens*. (Somerset).—The specimen sent has no relation to the Cinnamon, which belongs to the Laurel family, while your plant appears to be one of the Gingerworts and is probably an *Hedychium*.

COVENT GARDEN MARKET.—JANUARY 4TH.

Trade still very quiet, with supplies quite equal to the demand.

FRUIT.					
	s.	d.	s.	d.	s.
Apples, half sieve .. ..	1	0	to	3	6
„ Nova Scotia, per barrel .. ..	12	0	17	0	
Cobbs, Kent, per 100 lbs. ..	0	0	125	0	
Grapes, per lb. .. ..	0	6	2	0	
Lemons, case .. ..	15	0	to	35	0
Oranges, per 100 .. ..	4	0	9	0	
Peaches, per dozen .. ..	0	0	0	0	
St. Michael Pines, each ..	3	0	6	0	

VEGETABLES.					
	s.	d.	s.	d.	s.
Beans, Kidney, per lb. ..	0	6	to	0	0
Beet, Red, dozen .. ..	1	0	0	0	
Carrots, bunch .. ..	0	4	0	0	
Cauliflowers, dozen .. ..	2	0	3	0	
Celery, bundle .. ..	1	0	1	3	
Coleworts, dozen bunches ..	2	0	4	0	
Cucumbers, dozen .. ..	8	0	12	0	
Endive, dozen .. ..	1	3	1	6	
Herbs, bunch .. ..	0	3	0	0	
Leeks, bunch .. ..	0	2	0	0	
Lettuce, dozen .. ..	0	9	1	0	
Mushrooms, punnet .. ..	0	9	1	0	
Mustard and Cress, punnet ..	0	2	to	0	0
Onions, bunch .. ..	0	3	0	5	
Parsley, dozen bunches ..	2	0	3	0	
Parsnips, dozen .. ..	1	0	0	0	
Potatoes, per cwt. .. ..	2	0	5	0	
Salsafy, bundle .. ..	1	0	1	6	
Scorzouera, bundle .. ..	1	6	0	0	
Seakale, per basket .. ..	1	6	1	9	
Shallots, per lb. .. ..	0	3	0	0	
Spinach, bushel .. ..	3	0	3	6	
Tomatoes, per lb. .. ..	0	2	0	6	
Turnips, bunch .. ..	0	3	0	4	

PLANTS IN POTS.					
	s.	d.	s.	d.	s.
Arbor Vitæ (golden) dozen ..	6	0	to	12	0
Azalea, per dozen .. ..	42	0	60	0	
Begonia, per dozen .. ..	6	0	12	0	
Chrysanthemums, per doz. ..	6	0	9	0	
„ large plants, each ..	1	0	3	0	
Cupressus, large plants, each ..	2	0	5	0	
Cyclamen, dozen pots .. ..	9	0	18	0	
Dracæna terminalis, dozen ..	18	0	42	0	
„ viridis, dozen .. ..	9	0	24	0	
Euonymus, var., dozen .. ..	6	0	18	0	
Evergreens, in var., dozen ..	6	0	24	0	
Ferns, in variety, dozen ..	4	0	18	0	
Ferns (small) per hundred ..	6	0	to	8	6
Ficus elastica, each .. ..	1	6	10	0	
Foliage plants, var., each ..	2	0	10	0	
Hyacinths, dozen pots .. ..	8	0	12	0	
Lycopodiums, per dozen ..	3	0	4	0	
Marguerite Daisy, dozen ..	6	0	14	0	
Myrtles, dozen .. ..	6	0	9	0	
Palms, in var., each .. ..	1	0	15	0	
„ (specimens) .. ..	21	0	63	0	
Primula, single, doz. pots ..	4	0	6	0	
Solanums per dozen .. ..	9	0	12	0	
Tulips, dozen pots .. ..	6	0	9	0	



## AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

Oreloid Blooms in variety.

Grand Blooms in variety.											
	s.	d.	s.	d.		s.	d.	s.	d.		
Arum Lilies, 12 blooms ..	4	0	to	9	0	Mimosa, French, per bunch	1	0	to 1	6	
Azalea, dozen sprays.. ..	1	0		1	6	Orchids, per dozen blooms	3	0		12	6
Bouvardias, bunch .. ..	0	6		1	0	Pelargoniums, 12 bunches	8	0		12	0
Camellias, doz. blooms ..	1	6		4	0	Pelargoniums, scarlet, doz.					
Carnations, 12 blooms ..	1			3	0	bunches .. .. .	6	0		9	0
Chrysanthemums, dozen						Poinsettia, per bloom ..	0	4		0	9
blooms .. .. .	1	6		4	0	Primula (double) 12 sprays	0	6		1	0
Chrysanthemums, dozen						Pyrethrum doz. bunches ..	3	0		6	0
bunches .. .. .	6	0		12	0	Roses (French), per doz. .	1	6		3	0
Eucharis, dozen .. .. .	4	0		6	0	"    boxes, 100.	5	0		8	0
Gardenias, per dozen ..	6	0		9	0	"    (indoor), dozen ..	2	0		4	0
Hyacinth, Roman, 12 sprays	0	6		1	0	"    Red, per doz. blooms..	1	0		2	0
Lilac, white, French, per						"    Tea, white, dozen ..	1	6		3	0
bunch .. .. .	4	6		6	0	"    Yellow, dozen .. ..	4	0		6	0
Lilium longiflorum 12						Tuberose, 12 blooms.. ..	0	6		1	0
blooms .. .. .	9	0		12	0	Tulips, dozen blooms ..	1	0		3	0
Lilium (var.) doz. blooms	3	0		5	0	Violets, Parme, French, per					
Lily of the Valley, dozen						bunch .. .. .	4	6		6	0
sprays .. .. .	2	0		4	0	Violets, Czar, French, per					
Maidenhair Fern, doz. behs.	4	0		8	0	bunch .. .. .	2	6		3	6
Marguerites, 12 bunches ..	3	0		6	0	Violets, Victoria, French,					
Mignonette, 12 bunches ..	3	0		6	0	dozen bunches .. .. .	2	0		3	0



## THE NEW YEAR.

THOUGH the gloom and sadness of hard times hung like a heavy fog over the last hours of the old year, we do not enter the new year without hope of bright days to come, of a renewal of prosperity even in agriculture. That this is possible we have not a doubt; the difficulty appears to be in seeing how it is to be managed, and our first article this year may well be devoted to the good work of clearing the way for a change that is inevitable.

For our hope of bright days to be realised we must not expect to have what is so clearly impossible—i.e., Wheat at anything like £3 or £4 a quarter. That is a thing of the past; with such prices it answered to sow everywhere, but now it is only in good, deep, rich, mixed soil that Wheat can be grown at a profit. The matter is very simple; the average Wheat yield in this country of 29 or 30 bushels an acre means a loss, the possible Wheat yield of 40 to 48 bushels an acre means a profit. Let this be clearly understood. Further, let the man who persists in sowing Wheat in poor or badly tilled soil understand that he alone must suffer for his folly, and that he has no just claim upon his landlord or his country for assistance. We may be—nay, we have been—told that a certain quantity of Wheat straw must be grown for rick thatching, and for the stable and hovel litter. Our answer is, Sow Oats; be satisfied with nothing less than 80 bushels an acre, and you will have plenty of straw both for food and litter, and corn for all live stock on the farm. Nothing fattens poultry or pigs better than oatmeal; nothing keeps ewes heavy with lamb in condition better than crushed Oats; for horses, cows, bullocks the food is alike excellent; and remember that, though thin Russian Oats can be bought so cheaply, a really heavy British Oat is far more profitable. Resolve for one thing in the new year to give this matter a fair trial. Procure really fine seed, weighing quite 40 lbs. per bushel, sow early and thickly, and drill with the seed per acre 1 cwt. of nitrate of soda, the same quantity of superphosphate, and half a hundredweight each of steamed bone flour and muriate of potash. If you have any doubt about the matter try it on a small scale—say, in a single field, and prove for yourself how profitable it is.

Apply this common sense principle of thorough culture to all farm crops. As Professor Wrightson said recently, "Rent, rates, tillages and seed, are equally expended upon all crops, whether good or bad." Just so is it with farm stock—the bad cost even more to feed than the good—a poor Irish steer is a far more costly animal to rear than a choice home-bred beast,

but even the home-bred animal must have ample shelter and food now. We are told that thousands of beasts were grazed at a loss in the Midlands last year: we do not wonder. Go through the dairy farms of Leicestershire and Derbyshire now, and see, if you can, how the half-starved store cattle out on the pasture, without shelter, and with so little food, can be expected to answer? Here a change to fewer numbers, more substantial food, efficient shelter, would certainly be a change for the better—grazing for profit instead of for loss—and the graziers who keep their cattle in such wretched plight all winter have no more claim for pity than incompetent Wheat growers. Both have the right and wrong way set before them; let them help themselves before crying out for help from without; then, when they have shown themselves worthy of assistance, it may, if found necessary, be accorded them.

With advanced rates by railway companies for milk carriage, an outcry is a certainty. But the railway carriers consider their action justifiable, because the milk carriage is a bulky unprofitable business in comparison with that of the minerals which form so large a bulk of the business of the great companies north of London. If only the effect of the higher rates is to check the sending of milk to London from such long distances, and to induce the establishment of farmers' co-operative cheese and butter factories, it will do much good. We have repeatedly shown how, if the milk supply of the metropolis and other large towns were confined to a given radius, it would tend to raise the price of milk both for the producer for towns, and for the factories outside town supply boundaries; there would also be a great saving upon the present heavy outlay for carriage by rail. Such a highly desirable change can only be effected by co-operation. We believe it will come by such means in due course, as also will the better production and disposal of all farm produce. Self-help as a body, as well as individually, is what farmers require very much more of to meet hard times. The burdens on the land may then be lightened too, both in rating and taxation; butcher and baker will then be met and fought on their own ground; and the co-operative factory dairy shops, with a steady supply of first-class butter, will soon drive the inferior Danish and Brittany butter out of the market. Imported butter now on sale may have the merit of uniform quality, but that is all that can be said for it, and it is always devoid of the delicious flavour of really good butter.

## WORK ON THE HOME FARM.

Advantage has been taken of the hard frost to cart firewood of all kinds for home use, also gravel for roads and paths, chalk for the bottoms of yards, and lime for the land. All such work is pushed on with now in order to avoid any hindrance from it in spring when horses and men are required upon the land. Our handy man is overhauling farm implements for cleaning, repairs, and painting, which should be done at least once a year. Under good management each tool or labour-saving appliance is kept in such perfect order that it is ready for use when wanted. How frequently have we seen mowing machines sent off for repair just when mowing is beginning with the vexatious certainty of having to wait for them and losing several fine days! Instead of being placed away dirty and broken in any shed or outbuilding till wanted we would have all implements kept together trim, neat, bright, and efficient as care and pains can make them. We earnestly invite the attention of home farmers to this, which if it is a mere matter of detail is one of sufficient importance to merit their best attention.

Let the lambing yard or fold be got ready for use. Oats and Peas in stack near the fold should be threshed and the straw restacked close at hand for use. Have plenty of straw cut into chaff, Oats crushed, and ample supplies of all food at hand for the shepherd. Two or four-toothed ewes may not require crushed Oats, but they are decidedly best for full-mouth ewes and all animals of mature age. Keep plenty of Pea straw in racks for the sheep, and see that they have chaff and Oats in the troughs twice daily. Use few, if any, roots during the prevalence of very cold weather. This is a matter about which shepherds are not to be trusted, from the common idea that roots are good for the milk, and they will have the roots if they can get at them. After the lambing we allow a regular supply of roots with other food, but roots are not to be regarded as indispensable. With plenty of silage roots can be dispensed with. The silage is much the cheaper article of diet, ewes and lambs like and thrive upon it, and it ought to enter largely into every scheme of farm management. Provide cribs for the separate use of each



ewc immediately after the lambing, make a point of each ewe being kept there till it allows the lamb to suck freely, and it is seen to take food well and to be in satisfactory condition. Then it may go to the large general fold where other ewes and lambs are kept at night and on rough days till the lambs are well advanced in growth and strength.

### REPORT OF THE CLOVER AND GRASS SEED HARVEST OF 1892.

THE seed harvest for 1892 was a memorable one in many points. It will be remembered that in 1891 we had to report an unfavourable condition of things, which was fully substantiated long before the English sowing season had approached its end. The scarcity of fine quality Clovers in particular became early apparent and caused values to rule very high. At a later period the entire absence of these higher grades left an opening for the cheaper classes which were readily snapped up, and as a consequence the new season opens with a market that is absolutely bare of yearling offerings.

In England the circumstances governing the new crop are very similar to those prevailing at the previous harvest, a long and severe winter followed by a generally ungenial summer with an over-abundance of autumn rains, has brought about a very unsatisfactory result, and in addition to this unkindness of the season at home, in Germany the crop is short, and, owing to the drought, for similar reasons the crop in France is almost a failure. In America the outlook is uncertain and unfavourable, prices rule high, and samples are weak, washy, and inferior.

**RED CLOVER** (*Trifolium pratense*).—The English crop, which a month or two ago promised to be an average one, has been seriously interfered with by the late rains, and is likely to come considerably short of earlier estimates. The quality, it is anticipated, will under any circumstances be better than last year. Continental reports, including Italy, Germany, Denmark, Holland, and Russia, are very conflicting; in some districts a fair yield of sound seed is expected, whilst from others the accounts speak of short and unsatisfactory crops. The crop in France is so far a failure that they have none to export, and are buyers rather than sellers. The American crop is reported from 10 to 20 per cent. under the average, and this yield, if taken as correct, means that little will be exported. Judging of the standard qualities from samples that have come into our possession, it may be reasonably expected that the Red Clover crop, taken all round, will be a short crop in all the chief producing districts.

**WHITE CLOVER** (*Trifolium repens*).—In England a larger acreage than usual under this Clover bids fair to show extra good quality. From the Continent all sorts of statements reach us. From Moravia and Silesia we are told the harvest is bad; from Poland and Bohemia we learn that the output is exceedingly meagre; from certain parts of Germany and France we hear of better things from some localities. American reports present a material shortage in quantity, with small seed, wanting in quality. So far as we have handled samples, the European seed, although bright, is small in grain and very dirty.

**ALSIKE CLOVER** (*Trifolium hybridum*).—The small English acreage held promise of a fair yield a month or two back, and it remains to be seen how far the last incessant rains have interfered with this prospect. Reports from Germany, Austria, and Sweden are so far satisfactory. From Canada the latest information speak of a good crop, well harvested; the quantity of actually available seed, however, is unfortunately restricted by a deficiency in the area under cultivation.

**COW GRASS** (*Trifolium pratense perenne*).—In direct sympathy with Red Clover, this crop is likely to be much under the general average, and really choice parcels will as usual command good money.

**TRIFOIL** (*Medicago lupulina*).—is reported below the average. Samples we have already handled are bold but somewhat discoloured; choice and bright seed is held at exceptionally high rates. This crop, however, is always an extensive one, both at home and abroad; and whilst the fine grades are certain to go dear, medium qualities will in our opinion be obtainable at more reasonable figures.

**LUCERNE** (*Medicago sativa*).—An under average crop is reported, and prices may be expected to have an upward tendency.

**TIMOTHY** (*Phleum pratense*).—Unfavourable accounts are given of this crop, both in America and Germany, and higher figures are expected to rule. The British crop is too infinitesimal to affect values.

**RAPE** appears to be a fair average crop, harvested, both at home and abroad, in excellent condition. The samples now offering are very black and dry.

**WHITE MUSTARD**.—This is a disappointing crop, poor in quality and bad in colour. The quantity under cultivation seems much smaller than usual, and what is consequently a scanty harvest has been largely bought up by the mustard grinders. The values now prevailing for this article are higher than they have been for many years.

**CANARY** still stands at a very high figure, in consequence of unsatisfactory reports from the leading producing districts.

**SWEDS AND TURNIPS**.—The advent of the new crop has caused prices of many varieties to ease a little. The harvest, however, is a short one in most districts, and values, more particularly of Sweds and Scotch Yellows, are likely to continue high.

**PERENNIAL RYE GRASS**.—Little of one-year-old seed appears to have been left over, either of Scotch or Irish growth, consequently prices have ruled high throughout the summer. The new crop is reported from all parts to be deficient in yield, but this seems to be partly met by an increased acreage under growth. There is no doubt the long and con-

tinued winter seriously prejudiced the prospects of the plant, particularly in the seaboard districts in the south of Scotland, and as a result the natural weight per bushel is certain to be some pounds lighter than in an average season. Prices are likely to advance.

**ITALIAN RYE GRASS**.—In close association with its more permanent relation, this useful Grass is reported short from all parts, both in Great Britain and France, for the same climatic reasons. At the present time values are about 50 per cent. higher than those prevailing in an ordinary year; and these figures will be most likely maintained.

**MANGEL**.—This crop has been sadly affected by the hard winter, which killed a large portion of the bulbs out for seed, and is likely to come in very short in quantity and deficient in size. The continental crops are in many parts in direct sympathy with our own, and it is only in favoured districts, that have escaped the weather, that anything like a satisfactory yield is expected.

### NATURAL GRASSES.

**ANTHOXANTHUM ODORATUM** (Sweet Vernal).—There is a very poor crop of this Grass, the plant having suffered severely from frost during the period of tender growth.

**AGROSTIS STOLONIFERA** (Fiorin).—This is reported as under the average crop both in Germany and America, and prices are likely to rule high.

**ALOPECURUS PRATENSIS** (Meadow Foxtail).—This is again one of the shortest crops in Germany. On the other hand, the Russian and Scandinavian harvests are reported an average. Clean seed, free from maggot, is likely to command good money.

**CYNOSURUS CRISTATUS** (Crested Dogstail).—This Grass is the mystery of the season, being practically a failure in England, Ireland, Holland, and Germany, and all other producing districts. In our own experience a grower who controls a large producing district, and who we usually look to for ten to twenty tons at least, is only able to offer two to three tons, and that at an almost prohibitive price. In view of this the values must remain abnormally high.

**DACTYLIS GLOMERATA** (Cocksfoot).—There is every likelihood of a sufficiency of this Grass, what with the New Zealand, American, continental, and British crops, to meet all ordinary demands.

**FESTUCA TENUIFOLIA** (Fine-leaved Fescue).—This crop is usually very light. Reports state that even less has been harvested this season than the preceding year, which gave a very limited supply. As its principal use is in the formation of lawns and pleasure grounds, this Grass is not an important factor in the supply.

**FESTUCA DURIUSCULA** (Hard Fescue).—Is again under an average crop, and prices are likely to advance considerably.

**SHEEP'S FESCUE** (*Festuca ovina*).—The same may be said of this useful Grass.

**FESTUCA PRATENSIS** (Meadow Fescue).—Both in Britain, Germany, and America this Grass is reported exceedingly short, and more money is already asked for fairly clean samples. The small quantity at present produced in New Zealand scarcely affects the market.

**FESTUCA ELATIOR** (Tall Fescue).—This Grass is even less plentiful than in previous years, and true samples will command high prices.

**POA TRIVIALIS AND NEMORALIS** (Rough-stalk Meadow Grass and Wood Meadow Grass) are average crops of generally inferior quality. Heavy and well matured samples will secure high prices.

**POA PRATENSIS** (Smooth-stalk Meadow Grass).—Reports from the Continent and America speak of a good average crop, and prices will be much more reasonable than of late.

As in previous years, there is an abundance of inferior Grass seeds of all kinds in the market at all sorts of prices.—JAMES CARTER AND CO., High Holborn.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

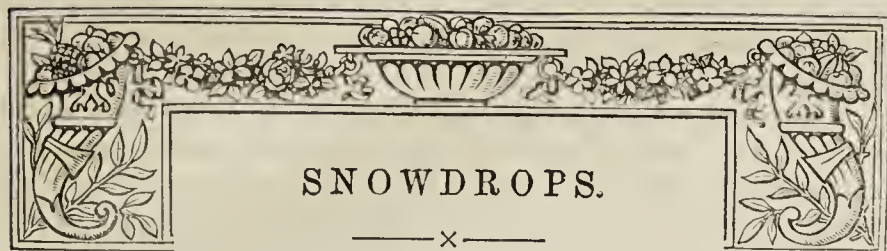
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1892. December.		Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
Sunday	25	29.952	26.8	26.1	N.	37.3	32.7	23.8	45.2	18.1	Inchs.
Monday	26	30.132	25.8	24.7	N.E.	36.6	35.1	24.3	50.7	18.3	—
Tuesday	27	30.259	19.9	19.0	W.	35.4	33.8	16.7	35.3	12.1	—
Wednesday	28	30.355	27.8	27.6	W.	35.3	29.9	18.3	35.1	15.5	—
Thursday	29	30.066	28.9	28.8	W.	34.3	32.2	26.0	33.0	20.3	—
Friday	30	29.879	22.9	22.7	N.E.	34.2	32.7	20.4	33.3	13.1	—
Saturday	31	29.852	32.4	31.4	E.	34.0	34.0	22.0	35.2	17.2	—
		30.071	26.4	25.8		35.4	32.9	21.6	38.3	16.4	—

### REMARKS.

25th.—Almost cloudless throughout.  
26th.—Cloudless morning; bright afternoon and evening.  
27th.—Rather dense fog in morning; clear after 1.30 P.M.  
28th.—Fog all day; dense in morning and evening.  
29th.—Fog, generally very dense, till 11.30 A.M., when it cleared completely and very suddenly, but began to accumulate again soon after noon, and was thick by 1 P.M.; cleared again at night.  
30th.—Fair, but slightly foggy in morning.  
31st.—Overcast, but free from fog.  
An absolutely rain and snowless week, completing a drought of seventeen days. Very foggy and extremely cold. Only one week has been equally so (December 20th to 26th, 1891) for at least ten years.—G. J. SYMONS.





SO long have we been accustomed to the Snowdrop withholding its pure blossoms from our view until the last days of January or early February, that the public mind has been slow to recognise that there are not only Snowdrops which bloom in midwinter also, but others which come in October to give our gardens a new charm in the time when flowers are becoming few and far between.

So long, too, has the Snowdrop of our gardens and parks remained the child of nature, untutored and unchanged by art, that we are almost unwilling to believe that this "early herald of the infant year," with its chaste and simple blossoms, may be constrained to produce varieties which will yield us flowers of larger size, of varied form, and of other markings. To me, for one, for long these changes were unwelcome, and it was with feelings in which some dread of seeing the Snowdrop attain the status of a "florist's flower" was predominant that some years ago I began to see that a new destiny awaited this simple flower. Further reflection, however, shows on what shallow basis this dread was founded. The Daffodil, for instance, has lost nothing, but has vastly gained by the labours of Leeds, Backhouse, and the more recent cultivators who have sought to add new forms to our gardens. Nor has Dame Nature herself, even in the Snowdrop, taught us a lesson of immutability, for many examples of her work in yielding us new varieties are coming into view, and where she has led the way we need not disdain to follow.

The Snowdrop Conference of the Royal Horticultural Society, held on March 10th, 1891, may be said to have marked a great step in the movement for the increased cultivation of the species and varieties of the *Galanthus*, which has been slowly making its way among a limited number; and it is to be hoped that this movement will make still greater headway, checked though it is by the difficulty, or rather impossibility, of obtaining many of the newer introductions through the medium of the ordinary trade sources. It is with the view of adding some slight impetus to this movement that these notes are penned, incomplete as they necessarily are, the literature of the Snowdrop being now too extensive to permit of its condensation into the limits of this article.

Treating of the Snowdrops in cultivation in the order of their flowering we have, as the pioneer of the genus, the early *Galanthus octobrensis*, blooming in Britain in October or early in November. This is a pretty but delicate flower, partaking of the character of *G. nivalis*, of which it is in reality only a variety or a sub-species. This Snowdrop was first introduced into this country by the late Rev. Harpur Crewe, who received bulbs from Lord Walsingham, who had collected them on one of the Albanian mountains.

Following *G. octobrensis* are some other varieties, which are as yet too rare, and have been too short a time in our gardens to speak with any certainty of their average blooming time. Of these *G. Rachelæ* and *G. Elsæ* are in cultivation, but are so rare as to be almost priceless. The former was collected by Professor Mahaffy on Mount Hymettus in 1884 or 1886. This was in leaf in Dublin in December, and I have a bulb, received under this name, which is also in leaf, but it is quite possible that mine may not prove the true sort, as there are several winter-flowering varieties at present going under the names of *G. Olgæ*, *G. Rachelæ*, and *G. Elsæ* on the continent. Of the authenticated *G. Rachelæ* there are very few bulbs in existence, and I should be glad to possess one of these.

*G. Elsæ* was in bud in Dublin in December, but it has been known to open earlier. *G. Olgæ* is at present in uncertainty. It was originally found on Mount Laygetus by Orphanides, but unfortunately, on account of his sad illness, no further trace of it seems to have been found. *G. Elsæ* was brought from Mount Athos by Professor Mahaffy.

In all probability, however, it will be found that *G. coreyrensis* or *præcox*, said to have been sent from Corfu to the Rev. Harpur Crewe, is the Snowdrop which in ordinary seasons will succeed *G. octobrensis*. This flowered with me in the end of November, 1892, but it generally flowers from the middle to the end of December. This is a small but pretty form of *G. nivalis*, to which species *G. Rachelæ* and *G. Elsæ* also belong. It, like all the other autumn-flowering varieties, possesses the glaucous line down the centre of the leaf, which is a noteworthy feature of these varieties. There are several Snowdrops from Corfu, of which little can be said, for the sufficient reason that they have not yet been properly named, and in all likelihood some of these will be offered under the names of some of the rare varieties being inquired for. I have two bulbs from the continent, as "received from Albania, and probably *octobrensis*." They are only in bud, and although of the autumn and winter-flowering type it is likely enough from their appearance that they will prove to be bulbs of *G. coreyrensis*.

The next to bloom in our gardens is *G. Elwesi*, one of the finest of our Snowdrops, although having the defect of failing in some gardens, and also of being weak in the stem. Mr. Allen of Shepton Mallet, to whom, in a very great degree, the movement in favour of the Snowdrops is due, is endeavouring to raise seedlings of a more vigorous type, and it is to be hoped that he may be successful. *G. Elwesi* is very distinct, not only from the inner petals being arranged in a tube-like manner, but also from the dark green basal blotch extending to half their length. There is a very considerable variation in this species, and several superior forms are at present in process of selection. Mr. Allen has found some with the inner petals almost entirely green, and Mr. Boyd of Melrose has raised a seedling which flowered for the first time in 1892, and which is entirely white. According to Mr. Baker's "Handbook of the Amaryllidæ," *G. Elwesi* was discovered by Balansa in 1854, but was only individualised in 1875 by Mr. Elwes. Mr. Baker gives February as the flowering period in this country, but I have found this species flowers very early in January in ordinary seasons with me. This season it is later than usual. Imported bulbs are, however, earlier, and have been showing flower from early in December. I have also under observation bulbs received from the Bithynian Olympus, and marked by my correspondent as probably *G. Elwesi*. The leaves, however, appear broader than those of *Elwesi* which has been introduced from the mountains near Smyrna. I can find no note regarding the *Galanthi* of the Bithynian Olympus, and am in hope that I may find something near *G. Fosteri* among my bulbs. *G. nivalis*, our common Snowdrop, has proved much more variable than is generally believed.

Besides the various autumn varieties already noted, those which flower in spring vary considerably. Taking these varieties in alphabetical order we have *G. æstivalis*, a very pretty and distinct little Snowdrop with bright green markings, and flowering much later than the type. I have had this for some four or five years, and find it very useful for cutting purposes. *G. Cathcartiæ* found, I believe, in a Scottish garden is a form with twin spathes and no green markings on the sepals. *G. flavescens* has yellow markings on the inner petals and a yellow ovary. This was found in Northumberland by Mr. Boyd, and it is found a stronger grower than *G. lutescens*, which is of somewhat similar character, but with the yellow of a paler tint. This was also found in Northumberland, but in a different garden, and by Mr. Sanders of Cambridge. *G. major* is said to be a large flowered form of *nivalis*, and is one which I only succeeded in obtaining last autumn.



*G. n. Melvillei*, a seedling raised at Dunrobin Castle by Mr. D. Melville, is a fine variety with stouter and longer leaves and stem and large flowers. *G. n. pallidus* is a pale green marked variety of rather earlier habit than the type. *G. n. poculiformis* was originally raised at Dunrobin, but afterwards found also in Wales. This has the inner perianth segments nearly as long as the outer, and the green markings are entirely absent. *G. n. reflexus* does not seem to be in cultivation, but I understand the name is given on account of the inner segments being partly reflexed. A double form of this has been catalogued, but I have found it not forthcoming when ordered. *G. Scharloki* has twin leafy spathes and large green spots near the base of the outer sepals. *G. n. serotinus*, another Dunrobin seedling, is a very small form, flowering even later than *G. æstivalis*. *G. virescens* is more valued as a curiosity than for its beauty, the sepals being striped with green near the base and the inner petals nearly all green except the margins. The ordinary double form of *G. nivalis* is well known, and in addition there are a few seedling doubles which have not yet been distributed.

There are a considerable number of other forms of *G. nivalis*, varying in form, stature, and markings, and it is highly probable that others will be found in gardens now that attention has been more widely attracted to the existing varieties. I have heard of plants of *G. nivalis* which were found near Galston in Scotland, and which had stems 20 inches in length and with flowers of proportionate size. The bulbs were lifted, and are being grown in order to ascertain if this large form will prove permanent, or is only due to exceptional soil or position.

*G. Imperati*, which is a sub-species of *nivalis*, has broader leaves and larger flowers. It is a native of Naples and Genoa, and, like the other sub-species, *G. caucasicus*, has produced some fine varieties. *G. I. Atkinsi* is one of the finest of these, being of large size and great purity of colour. I am indebted to Mr. Allen for this variety, and for some others. *G. Imperati Boydi* is another very fine form, having flowers occasionally  $1\frac{1}{2}$  inch long. *G. caucasicus*, which is the Caucasian form of *G. nivalis*, has broader leaves than the type, and is later in flowering. According to Mr. Baker this sub-species includes *Redoutei*, major, and *caspicus* of Ruprecht. Mr. Baker also seems to consider *G. virescens* a variety of *G. caucasicus*, although Mr. F. W. Burbidge only mentions it as a variety of *G. nivalis*.

*G. latifolius*, which flowers in this country in February and March, is a very distinct species from the Caucasus, with broad shining green—not glaucous—leaves and small white flowers  $\frac{1}{2}$  to  $\frac{3}{4}$  inches long, with only a green patch in the outside and inside of the inner segments. There is a fine variety of this called *latifolius major*.

*G. Fosteri*, introduced from Amasia in the province of Sirwas, Asia Minor, and named in honour of the introducer, Professor M. Foster, is one of our latest acquisitions, which has been the subject of considerable criticism, due to its presenting much variation. It is supposed to be a hybrid between *G. latifolius* and *G. Elwesi*, and has broad green leaves with somewhat similar markings on the flowers to those of *G. Elwesi*. The first of this which I bloomed gave me considerable disappointment, but other flowers caused me to modify my earlier opinions, and the best forms are well worthy of cultivation.

*G. plicatus*, readily recognised by its plicate leaves, is now fairly well known. It is a native of the Crimea, and, although not so well formed as some of the others, is valuable from its late flowering habit, it being the last in flower. Several varieties are now in cultivation, some of these being seedlings and others selected forms. Two found by Mr. Boyd of Melrose in a garden in Berwickshire are good forms which should be obtained if possible. The first, *G. p. maximus*, has long narrow flowers which in favourable conditions are quite 2 inches long. The other, *G. p. Chapeli*, has smaller flowers, but these are of fine form and with broad petals. In the *Journal* in 1892 I noticed several hybrids raised between *G. plicatus* and *G. nivalis*, by Mr. W. Thomson, of High

Blantyre were described. Mr. Allan has another seedling, apparently of the same origin, but not obtained by artificial fertilisation.

These notes, although long, are much condensed, and much of great interest remains unnoticed. I hope, however, as some of the Snowdrops come into flower to have the opportunity of supplementing this article. May I, however, ask those who grow Snowdrops extensively to pay careful attention when they come into flower? We do not want merely trivial distinctions, but varieties of distinct merit. May I also urge those who are raising seedlings to adopt names more in keeping with the character of the flower than are sometimes applied to flowers? I do not think such titles as Goliath, Champion, or Longshanks would be considered appropriate.—S. ARNOTT.

## ECONOMICAL GARDENING.

AT the beginning of another year the thoughts of all gardeners will be largely occupied with plans and prospects concerning the future. Some will happily be able to pursue the even tenor of their ways with plenty of help and ample pecuniary assistance at their command wherewith to maintain in high keeping the gardens under their charge. The majority, however, are forcibly reminded that rigid economy must still be the order of the day. They know, too, to how great an extent this increases their difficulties, as they have economic as well as cultural problems to solve. This being so, it is no use to ignore the fact that a due regard to economy has become a necessary part of a gardener's training. Many men who have proved themselves to be splendid cultivators while every convenience was at their command cut but a sorry figure when they have to "garden under difficulties," and others have the knack of producing splendid results under circumstances which would bewilder less tenacious individuals.

One of the best and surest methods of promoting economy is to provide suitable work for the weather and occasion. When no time is wasted and each man takes a real interest in his work it is surprising how much can be accomplished. No one can make satisfactory progress with work of any kind while his limbs, if not his whole body, is benumbed with cold. In some callings which offer but little variety of work it is not easy to apportion the task according to the weather; it is, however, not so with gardening. Not a few individuals are possessed with the idea that the autumn and winter months are slack times in gardens. Such erroneous impressions may be easily dispelled by a year's sojourn in any well managed garden, for in such establishments there are no "slack" times.

If things are to be kept up to the best state possible according to the labour at command, a great number of important details must receive attention during the winter in order to lighten as far as possible the work of summer. The disastrous season of 1892 has affected landlords all over the country in a marked degree, so much so that economy in the garden will have to be put to severer tests than usual in many gardens. Already I have heard of reductions taking place in several establishments, and in others a considerable shortening of hands during the winter months. The latter proceeding I think few who have thought much about the matter will admit to be a work of real economy. To my mind, a far better policy, in cases where the expenditure has to be kept within a certain limit, is to keep a given number of regular hands, and to do the best that can be done with them, except at especially busy times, when a little extra labour is well employed, and work is given to men who make a speciality of short terms of service. In this way all who are employed retain a thorough interest in the work, and with good management in other respects places which are in reality conducted under adverse circumstances are apparently well kept.

Much of the work which in some places is left to the busy spring months may with advantage be performed in winter. I am a great advocate for giving garden walks more attention during the winter than they usually get, as I am confident that a vast amount of spring labour is by so doing rendered unnecessary; and, moreover, walks so treated are kept in better condition throughout. The keen frosty weather lately experienced has been especially suitable for this kind of work, and our own have received a thorough clearing, which will do much towards keeping them clean and bright for some time to come. Our plan of procedure is to go over them with the Dutch hoe, and scrape off the few weeds which are found. This is easily done now, as the gravel is as hard as a rock and the weeds brittle, which combination of circumstances enables the operator to remove them quite down to the roots without disturbing the gravel; any parts which have become green or discoloured are also scraped. The whole surface is then



brushed hard with a stiff broom, and the *débris*, which is chiefly sand and dust, wheeled away. When this is finished a smooth, bright surface is the result. Walks so treated do not become soft and spongy when the frost breaks to so great an extent as do others not so treated, simply because the fine particles removed would, if left, have formed a thin but still sufficiently thick coating of adhesive matter to cause the gravel to "take up" when walked upon.

The carting and wheeling of manure wherever required is another matter which has been carried out expeditiously during the late clear frosty weather. The large mass of rubbish of various kinds which accumulates during the summer months should also be dealt with, the rougher portions being burned, and the decaying parts thoroughly separated and thrown into a heap ready for carting away, so that the space set apart for the rubbish heap may be cleared up ready for another year's constant stream of refuse. These are all matters which should be pushed on with during fine frosty weather.

When wet or snowy days prevail all the labour available can be



#### CATTLEYA LABIATA ALBA.

WHEN the vast importations of *C. labiata* made by Messrs. Sander & Co. were disposed of, it was expected that in due course some noteworthy variations from the type would appear somewhere or other amongst them. The most remarkable example that has yet appeared is the pure white form represented by fig. 4, and which has flowered in the collection of M. Wells, Esq., Broomfield, Sale. It requires no detailed description, for it is a counterpart of the type in form; but the sepals, petals, lip, and tube are



FIG. 4.—CATTLEYA LABIATA ALBA.

pressed into work under cover, of which there is always plenty, let the winter be ever so long. Large stocks of brooms, sticks, labels, and pegs should be got in readiness, so that not a moment of fine summer weather is spent on such work. Tools also need mending, sharpening, and re-arranging; boxes for the propagation of bedding plants should also be made; pots ought to be washed and stacked away in sizes ready for use; and any other labour which can be spared be utilised to complete the annual clearing of houses, plants, and the top-dressing of inside fruit tree borders.

When dealing with plants infested with insects of any kind it is true economy to use freely some of the many excellent insecticides. With the use of these one man will in a few hours destroy as many insects as three could do with the use of sponge and stick or brush. Hours innumerable have been wasted at this kind of work.

Those who pay due attention to all these matters during the short days of winter will find their time quite as precious then as in the height of summer, and, moreover, the advantage thus gained by an early start leaves its mark upon their work throughout the season, enabling them to accomplish tasks which to some might seem impossible, and I opine that a vast amount of economical gardening may be successfully practised by working on the lines indicated.—LABOR OMNIA VINCIT.

white, the only colouring being a tinge of lemon in the throat, the combination being consequently the same as that in *Cœlogyne cristata*. It is an exceedingly beautiful one, and Mr. Wells must be esteemed fortunate in securing so fine and distinct a variety. *C. labiata alba* was placed before the Orchid Committee of the Royal Horticultural Society on December 13th, and awarded a first-class certificate.

#### ZYGOPETALUMS.

ACCORDING to the "Genera Plantarum," the genus *Zygopetalum* (sometimes written *Zygopetalon*) comprises about fifty species, including the plants known in gardens under the names *Bollea*, *Galleottia*, *Huntleya*, *Kefersteinia*, *Pescatorea*, *Promenaea*, and *Warscewiczella*. In gardens, however, the name is confined to a score or so of very handsome epiphytal Orchids from the warmer parts of America. They are characterised by stout pseudo-bulbs; large, strongly nerved evergreen leaves, leathery in texture and rich green, and erect scapes which spring from the base of the matured pseudo-bulbs, and bear several large showy flowers. The sepals and petals, which are much alike in size, shape, and colour, are partly united at the base, and spread in a peculiar fan-like manner; the lip is large, flat, and spreading. The disc is thick



and fleshy, and being ribbed or plaited has the appearance of a frill or ruff. The flowers are generally produced during the winter months, which greatly enhances their value. They supply a desirable colour among Orchids, the brown and green of the sepals and petals contrasting well with the blue and purple of the labellum. The flowers last a long time, and, unlike *Phalænopsis* and other winter-flowering Orchids, they are not affected to any great extent by fog.

Although epiphytes by nature *Zygopetalums* succeed best when grown in pots. These must be well drained, and the soil should consist of rough fibrous peat with a little sphagnum intermixed. A few lumps of charcoal may be added, and to these the roots will quickly make their way. *Zygopetalums* are often grown in the stove, but this treatment tends to enfeeble the constitution of the plants; with few exceptions they will succeed better in an intermediate temperature. During the period of growth a liberal supply of water is essential, and in bright weather slight syringings in the morning and evening are beneficial. They require abundance of sun and light, but should be shaded during the hottest part of the day. When growth is completed the supply of water may be gradually diminished, and in winter sufficient to keep the pseudobulbs from shrivelling is all that is required, though they must never be allowed to get quite dry.

*Z. BRACHYPETALUM*.—Sepals and petals short (as the name indicates), brown, streaked with green; lip white, veined with bluish violet; crest thickly striped with blue. A native of Brazil, introduced to cultivation in 1840, and exhibited before the Royal Horticultural Society in 1848.

*Z. BURKEI*.—A very distinct species, native of Guiana and Demerara. Exhibited by Messrs. Veitch, Chelsea, at a meeting of the Royal Horticultural Society in 1883. Sepals and petals green, thickly barred and spotted with brown; lip white with a crimson frill.

*Z. CLAYI*.—A garden hybrid between *Z. crinitum* and *Z. maxillare*, raised by Colonel Clay of Birkenhead about 1876. The large showy flowers are freely produced at various times of the year, according to the period of growth. Sepals and petals purplish brown, bordered with green, and with transverse bands of the same colour; lip rich violet-purple with a deeper coloured frill.

*Z. CRINITUM*.—A Brazilian species introduced in 1834. It closely resembles *Z. Mackayi*, and is figured in the "Botanical Magazine," t. 3402, as a variety of that species. The flowers are large, sepals and petals green, blotched and barred with brown; lip 2 inches across, creamy white with radiating blue or pink veins.

*Z. GAUTIERI*.—This is a native of Brazil, and was introduced in 1868. A very profuse bloomer, flowering as a rule in spring or summer. Sepals and petals large, green blotched and barred with brown; lip rich purplish blue with a deep velvety purple ruff. This species, of which there are several varieties, does well in a basket or raft.

*Z. INTERMEDIUM*.—A handsome free-flowering species introduced from Brazil in 1844. Perhaps the most useful and easily grown of all the *Zygopetalums*; too well known to require a detailed description here.

*Z. LINDENIÆ*.—A new and distinct species with narrow lanceolate acute sepals and petals of a light rose colour; the large ovate acute lip is white with numerous rose coloured veins. A native of Venezuela, introduced by Messrs. Linden and figured in "Lindenia," pl. 275, 1891.

*Z. MACKAYI*.—This, the oldest of the genus, was introduced from Brazil in 1825, and upon it Sir William Hooker founded the genus. It resembles *Z. intermedium* so closely as to be often confounded with it, and the latter may be met with in many collections under the name of *Z. Mackayi*. The flowers of the true *Mackayi* are, however, smaller than those of *intermedium*, and the lip is glabrous, while in *intermedium* the lip is more or less hairy.

*Z. MAXILLARE*.—A handsome species, the flowers of which are produced freely during the winter months and last for a long time either on the plant or in a cut state. The flowers are smaller than in most of the preceding kinds; the sepals and petals are green blotched with chocolate, the lip is nearly round, and is a rich bluish-purple.

*Z. ROSTRATUM*.—A well-known species with very large flowers, which differ considerably in colour from the majority of its congeners. It is a dwarf plant with a creeping rhizome, and succeeds best upon a raft or piece of Tree Fern stem. It flowers usually in late spring or early summer. Stove treatment is necessary for this species. The sepals and petals are white with greenish tips; the lip is white, with a few lines of lilac radiating from a crest of the same colour. Introduced from Demerara about 1830.

*Z. SEDENI*.—A garden hybrid between *Z. maxillare* and *Z. Mackayi*, raised in the nursery of Messrs. Veitch & Sons,

Chelsea. The flowers are large and showy; sepals and petals brown, with a narrow green margin; lip deep blue, with a rich violet frill.—A. B.

#### "THE ORCHID REVIEW."

THE first number of this new monthly publication has made its appearance, and if succeeding issues are similarly interesting, no doubt "The Orchid Review" will enjoy the patronage of a large number of Orchid growers. It is a convenient size, neatly bound in a slate-coloured cover, and contains thirty-two pages of well-printed letterpress. In addition to short paragraphs on various Orchids, the current number contains an account of "The Burford Collection," "Orchids of 1892," the first part of "The History of Orchid Hybridisation," "A Calendar of Operations for January," a report of the Orchids shown at the last meeting of the Royal Horticultural Society, and other matters of interest to orchidists. Illustrations of *Cypripedium* × *Niobe* and *C. × Edwardi* are given, with descriptive notes.

## HARDY FLOWERS.

### SELECTIONS INVITED.

MR. SHANKS asks me on page 547 of your last volume to undertake a work for which I am not qualified. To take the initiative in the formation of a society is beyond me. Give me a good leader and I will follow him. If any friends interested in the subject, however, care to send me their opinions and ideas I will endeavour to tabulate them, and give to the readers of the *Journal of Horticulture* the general results arrived at. Some well-known florists have already communicated with me.

Will Mr. Page Roberts, Mr. Burrell, and others give us their lists of some of the best herbaceous plants for cutting from the last week in June?

The first twenty-four should be kinds suitable for exhibition purposes, say:—

(I.) The most useful twelve kinds;

(II.) The second best twelve;

and so on to forty-eight kinds, to include bulbous plants.

There are many who I know are anxious to "buy in" as soon as spring comes round, and will be very grateful for a little help in the selection of *varieties*, too, as well as *kinds*.—J. A. WILLIAMS.

[We shall be glad to forward any lists that may arrive at this office to Mr. Williams, also to publish the tabulations to which our correspondent alludes. Some communications on "Showing Hardy Flowers" must perforce be held over till next week.]

## WINTER BEAUTY IN BEGONIAS.

THERE was a little passage of arms between Messrs. Watson and Veitch at the Chiswick Conference on Begonias in summer, which appeared to afford considerable amusement to the audience. The latter was in the chair, and managed to condense so much valuable historical information into his introductory remarks that the Kew authority said he feared there was very little room for his own lecture, smilingly adding that he regretted it, because he thought it was rather the better. To this Mr. Veitch promptly responded that in that case he was very glad he had spoken first. Both interested their listeners unmistakeably; indeed, the attention paid throughout the whole meeting was a sufficient indication of the interest that is now taken in the whole genus. The one regrettable thing was that time prevented Mr. Henry Cannell's contribution being taken, for he has so fine a collection of winter as well as summer blooming sorts, and presents them in such splendid condition, that any remarks from him on the best varieties and methods of culture could not have failed to prove valuable.

To say that the winter beauty which exists in Begonias is not sufficiently utilised would be something of a platitude. When we come to think about the matter, there are very few plants of which it could not be said with truth that they are not grown as much as they deserve to be. Of course they are not. There is some beauty or quality about almost every one of them, and beauty no more ought to be wasted than food. But if natural resources are boundless, human conveniences are finite, and we are driven, despite ourselves, to apply the law of the survival of the fittest. Too often it is not a question of what is to be selected, but of what is to be left out. There are the possibles, the probables, and the indispensables; the knotty problem is to classify the various claimants, so as to get in as many of the plants which "no garden, whatever its size, should be without," as can be grown well and creditably. The winter-blooming Begonias are in the transition stage. They have got beyond the possibles to the probables, and now they are struggling for admission into the charmed "indispensable" circle. It is not difficult to forecast the issue. Sooner or later they will win the day, and it only remains for those who



recognise the powerful nature of their claims to call attention to them whenever a word in season is likely to prove effective.

At Ascott I am told that Mr. Jennings grows the magnificent Gloire de Sceaux about as well and extensively as he does the Malmaison Carnations. If this be so they must present a sight the equal of which it would be difficult to find in the winter and spring, for a nobler plant there is not in the whole genus. Paterfamilias at the Swanley home of flowers is to be credited with its introduction, and it is one of the winter gems of his happy family. In a large house devoted to the winter-flowering section there the handsome foliage, not less than the charming flowers of this most beautiful plant, win the deepest admiration. In some spring notes on Woodstock Park, near Sittingbourne, I commented on the high place it holds in the estimation of that good gardener Mr. Dowdswell. There is nothing more effective there during the winter and spring. There cannot be the slightest doubt that it is one of the plants which have distinctly come to spread. The habit is admirable, the plant having a free open style of growth, and displaying its burnished leaves to the greatest advantage. The colour of the foliage is a point on which it is difficult to take a decided position. Reddish bronze would perhaps describe it the best, but however that might be it is both distinct and highly effective. Displayed amongst other plants it gives a warmth that is much appreciated in the cold dull season. It has "tone," as an artist would say. But the leaves are by no means the only effective part of the plant. The flowers, which are large and flat, are of a beautiful lustrous shining pink, a colour which, if not strictly fashionable, never fails to charm. If I might venture a word of advice to those who have a warm house to furnish in the winter, and wish its occupants to be select, I should say, Whatever your estimate of the Begonia genus as a whole may be put Gloire de Sceaux amongst the indispensables. There are two other dark-foliaged sorts fairly well known, Saturne and hydrocotilifolia. The latter is a very old friend, but Saturne is generally admitted to be a more effective plant, and though inferior to Gloire de Sceaux it has decided merit.

A green-foliaged Begonia of considerable value is undulata. It makes an admirable basket plant, and would, no doubt, look effective in a vase. The leaves are a deep green with a lighter margin, and the flowers are reddish salmon. Foliosa is hardly less valuable for the purposes suggested. Its leaves are small and dark green in hue, its flowers white with more than a mere suspicion of pink. This is a really good and graceful plant, well worthy of recognition. The variety Vernon or semperflorens atropurpurea is as useful for winter as for summer flowering, and its compact habit, free blooming, and pleasing bronzy leafage present a combination of attractions not easy to pass over. These are all as much esteemed for their leaves as for their flowers. Of these more particularly cultivated for blossom, nitida hardly needs a description, but it is too good to be excluded. Its variety alba odorata also merits a place, for, although the flowers are smaller than those of nitida, they are pure white and fragrant. It would be difficult to name two more useful sorts than these for winter work. Semperflorens gigantea carminea is effective in growth, its deep green leafage being distinctly striking, and its rich carmine red flowers being borne in great profusion. Odoratissima is another charming variety of the semperflorens group.

A winter Begonia which is not of very old standing, but which has well proved its claims for a place, is Carrièrei. This makes a delightful plant, not remarkable for great beauty of either foliage or bloom, but so full of flower under ordinary treatment as to win invariable admiration. Its easy management is a point not devoid of importance. Fuchsioides well merits its name, the clusters of beautiful pink flowers being both graceful and pleasing. Knowsleyana, silvery blush, has had its praises sung in the Journal more than once, and is so free growing and profuse in blooming that the present mention of it is not out of place. It makes an admirable plant, and is also valuable for cutting. Polyantha has flowers of a delicate pink shade, and they are very serviceable for sprays or even for working into buttonholes. Digswelliana is another pink that is now fairly familiar, but less so is Hybrida Wellsiana, which has drooping flowers of a pleasing red. Bijou de Gand is a pronounced midwinter bloomer, and bears its flowers in great profusion, while it is dwarf and bushy in growth. Insignis incarnata, lilac-pink; prestoniensis, rich orange red; Paul Bruant, pink; and socotrana, bright rose, are a valuable quartette. It would be easy to add to their number, for there are many others well worth mentioning, but there is often confusion rather than safety in numbers.

The feast of winter beauty which these plants provide is no meagre one; the question is their utilisation. The purposes they serve are numerous, and there are few establishments where no use could be found for them. Owing as we do a special debt of gratitude to all plants which give us brightness in the dull season, we ought to

look with special kindness on these Begonias, and there is much satisfaction to be found in the clear signs which exist of their growing popularity.—W. P. W.

#### IN MEMORIAM—MR. W. I. PALMER.

HORTICULTURISTS in Reading and the neighbourhood have sustained a very heavy loss in the death of Mr. William Isaac Palmer, one of the heads of the great biscuit firm. He passed away somewhat suddenly at the age of sixty-eight, and the occurrence came as a calamitous surprise to his thousands of friends, protégés, and admirers; for notwithstanding the fact that he closely approached the span of threescore and ten, he was a man of great vigour and had enjoyed robust health. We need hardly call special attention here to Mr. Palmer's life-long work in the cause of temperance or to the munificence of his public gifts, but it may not be out of place to mention the extraordinary extent of his private charity, the facts of which were sedulously kept secret during his lifetime, and have only come to light on the occasion of his death. He distributed a very large sum yearly unknown even to his intimate friends, and numerous poor widows in Reading were in receipt of weekly sums for assisting them in their struggle to live.

The deceased philanthropist—for such he was in the best sense of the term—was a great supporter of every movement for improving the condition and brightening the lives of the people. He took a special interest in horticulture, supporting the gardening societies in every possible way, and delighted in working in his own garden. At one time he was a very successful cultivator of Verbenas, while Pelargoniums, Roses, Chrysanthemums, and stove plants have all been grown exceedingly well at his residence, Hillside, Reading. Few men of culture and education were so broad in their tastes and sympathies as he. He closely followed the wonderful course of improvement in choice florists' flowers that has been going on in Messrs. Sutton & Sons' nursery for so many years, and while appreciating to the full their splendid strains of Primulas, Cyclamens, Cinerarias, Begonias, and other plants, was wont to say that he was still able to appreciate second class flowers. Modest blossoms in small gardens always won his admiration, and he was never weary of giving encouragement to all who endeavoured to add refinement to their lives of labour. At the funeral, which took place on Monday last, the leading firms, headed by Messrs. Sutton & Sons, closed their establishments, rich and poor alike mourning the loss of one whose exhaustless sympathy caused him to be looked upon as a friend rather than as a benefactor. May flowers shed their sweetest fragrance over the grave of one who loved them well, and strove to extend their influences far and wide.

#### PRICES AND QUALITY OF APPLES—CANKER.

I HAVE been waiting with some curiosity to see how Mr. Walter Kruse would extricate himself from the position in which his own words and his own figures had placed him. I took them as he gave them, without cavil or comment, giving him his own rope, so to say; but when the result showed that the average price of the Apples, of which Domino was one, was within a fraction of the figure, which in the case of his own fruit ("the finest and best packed" that ever went into the market) he admitted to be "very exceptional," he finds he has no time to go into the question, and must decline to continue the discussion. Considering that he found time to open it unsolicited, the pressure that compels this abrupt termination is not without significance. However, it is of no use my dwelling upon the matter further. I will therefore leave the subject, with the assurance to Mr. Kruse that I shall be only too happy to return to it should he care to wrestle another friendly fall with me when the present inroads upon his leisure have ceased. Perhaps I may add a recommendation that he should endeavour to spare a few moments for reading the letters from "A Yorkshireman" and "A Sussex Grower," on page 6; also those from Mr. Pearson and Mr. Molyneux, in the issue of December 15th. Further, I will add that I supplied to the Editor authority for every statement I have made as to the prices of Apples, from the 4s. 6d. per bushel Dominos to the £100 per acre Cox's; and the fact that those statements were allowed to appear may be taken as a proof that their accuracy is not questioned. I now send the sales bill of a London fruit broker, showing that the highest price obtained was 10s. and the lowest 4s. 6d., the nine varieties averaging within a fraction of 5s. 11½d. per bushel.

Turning to the question of canker, I have read the letters on the subject which have recently appeared with great interest. What Mr. Kruse has said about his soil and the applications made to it must have aroused the attention of many fruit growers, especially if, as in several cases on which comments have been made to me, it has been considered in connection with the remark in another letter, that his yearly manure bill for a farm of 40 acres amounts to £500. Most fruit growers agree with Mr. Tonks that the question of nutriment is at the bottom of many cases of canker, and it is important, therefore, that we should have detailed information as to the exact quantities of the different ingredients supplied in order to form a judgment that may be of practical value. In other words, I ask Mr. Kruse, in the public interest, to be good enough to tell us how his £500 a year is laid out. When he reflects that his answer may have an important bearing on the canker question which he has raised, and when I tell him that I also ask on behalf of one of the principal authorities on fruit in the country, I doubt not he will readily grant my request.—W. P. W.





## NATIONAL ROSE SOCIETY.—JUDGING.

YOUR correspondent E. R. Shanks (*Journal of Horticulture* pages 554-5) I suppose writes under a *nom de plume*, as his name is not on our list of members for 1892. I was much amused at his letter; in part it is quite comic, although possibly written quite seriously.

I do not come under Mr. Shanks' category of "clergymen" (although the son of one who was not a rosarian), "lawyers," "doctors," "intelligent tradesmen" (I wish I were one), or even growers of Roses for trade purposes; but I have been a Judge for some years at our N.R.S. meetings, as well as at Croydon, Reigate, Sutton, Windsor, and this year at Earl's Court and elsewhere. I do not think that we have any judge at our meetings who is so small a grower as Mr. Shanks mentions of—"300 or 400 plants." Nor can I agree with Mr. Shanks that the fact of growing a small number of Roses thereby debars a rosarian from having the judgment requisite to tell whether the Roses in a big class are good or not; but the fact is and always has been, that the large amateurs' classes are judged by "big growers" amongst the professionals, and in the same way the professionals' large exhibits are judged by the amateurs of greatest experience and who grow a considerable number—more like 2000 or 5000 than 300 to 400.

The selection of the Judges for these big classes is our first care, as we who are members of the N.R.S. Committee know how very important it is that the judging should be accurate. A professional Rose grower's career may be made or marred by successful exhibiting or the reverse, and I think I may confidently state as instances that the very great reputations of both Messrs. Benjamin Cant and Frank Cant have been partly made and much helped by their superb exhibits on very many occasions; also that such exhibits as other professionals this year have placed in evidence, notably those of Messrs. D. Prior & Son (of Colchester) at Croydon, and of Mr. Merryweather (of Southwell, Notts) at Chester, have brought them more prominently to the front; also that the reputations of great hybridisers like Messrs. Dickson of Newtonards, Ireland; Mr. Wm. Paul, and Mr. George Paul are maintained and enhanced by their victories and the numerous first class awards and medals gained at our N.R.S. Exhibitions. With the knowledge of these facts our judges are (to the utmost of our power and with the selection of such names as are at our disposal) most carefully arranged, and the best men possible decide the prizes in the classes they are supposed to be the best judges of and have had special experience in.

In regard to the Chester matter cited, the delay mentioned was on that occasion of absolutely no importance. My reason for saying so is that the day was a miserably wet one, and the flowers did not suffer by the delay. Moreover, any blame should fall on the shoulders of those deserving it, and that is on the Committee at Chester, who mismanaged the Show, and thereby delayed the opening and judging. I was one of those who "critically examined" the new varieties, and I may say that, as far as I can recollect the matter, the opinion of the majority had been expressed before one o'clock, and if any fault could be found in this particular case, it was in the fact that there were too many judges, and part of the delay was caused by the over-anxiety of one gentleman to have everybody's opinion, which fact alone unduly prolonged the period of judging which Mr. Shanks complains of.

It is the idea of some people that the bigger the grower the greater the opinion, and I think Mr. Shanks partly falls in with this view, but I do not agree with it, and I cannot see why a good medium-sized grower, or even a small practical grower of Roses for exhibition, should not be quite as good a judge as a grower of 3000 or 10,000 Roses. I may say that, from my own experience of Rose Show judging, I could instance several of the smaller growers who are infinitely superior in the quality of discrimination as regards the merits of Roses than many of those who grow their thousands. One reason for this superior expert knowledge is that an intelligent rosarian who has a comparatively limited number knows the merits and failings of all the Roses he grows, and that an exhibitor (our judges being taken from the best available of that class alone) usually grows only the best varieties, such Roses being the kinds shown at our meetings by the members who win our prizes.

## CRYSTAL PALACE ARRANGEMENTS.

IN reference to "W. R. Raillem's" well thought out remarks in your last issue (p. 4), I should like to say a few words. I am in agreement with him that the arrangements at the Crystal Palace are not at all sufficient to the requirements of our members' exhibits. There is no good reason for this failing on the part of the C.P. executive, as the time given between the closing day for entries and the meeting are quite sufficient to allocate properly the spaces for each class. As your correspondent pertinently puts it, any small societies would hear a good deal of complaint if their affairs were as inefficiently managed as the arrangements of the C.P. were at our meeting in 1892. But the question, I think, is even larger than this, as one would almost require to train specially (as matters now are at the C.P.) to run "100 miles in 100 hours" to cover the distance one has to get over when you exhibit in several classes.

## THE PROVINCIAL SHOW.

I hope "W. R. Raillem" is right in his belief that there is "more money" at Workshop than in East Anglia. I doubt it; but those responsible at Workshop will no doubt be equal to the occasion, and will produce the inevitably necessary coin. But surely a cathedral city could be found for a provincial show in East Anglia which would meet your correspondent's difficulty another year; and, as far as I am personally concerned, I should like on all subjects possible (outside the suggested new change of date for our Metropolitan Show) to meet the views of those to whom I am at times opposed, even at the sacrifice of some personal advantage.

## THE PROXY QUESTION.

"W. R. Raillem" has very properly said that there was no argument used at our meeting against this proposal except that of trouble to the secretaries. I should not dream myself of giving unnecessary trouble to those gentlemen, but if that be the only difficulty I can hardly see that it is a proper answer to this proposed concession which it is suggested should be made to country members who cannot attend our meetings. As I mentioned at the meeting, either side might be surprised at the result of the use of proxies; but I may remark that there are several, perhaps many, ladies members of the N.R.S., and they seldom grace (I believe that is the correct expression) our meetings with their presence. Ladies are not always shy, but they have a natural disinclination to go where they would be in a very small minority. For them voting by proxy would be a boon, and I know that there are several who take as great an interest in the welfare of the National Rose Society as any of the sterner members; moreover, they are keen judges of good Roses, and in fact there is one lady who helps our Executive yearly in that capacity; also as regards arrangement, colour, and form, we men are really "not in it" with them. For this portion of our Society proxies would be a desirable concession, and also for members in remote districts like the north of England, Scotland, and Ireland.

## DATE OF METROPOLITAN SHOW.

I am quite confident that whichever side is conclusively proved to be right in the next few years in regard to the date of the Metropolitan Show—and both sides will have dates to favour them from 1893 to 1898—will be able to win over the doubtful members, or those not keenly or personally interested in the question. In the interval, I think the matter would better be left to rest undisturbed, as it is one which is not conducive to "good blood." The fact of the supporters of later dates having such fixtures as July 7th, 6th, and 4th, in 1894-5-6, should reconcile them to the position of letting facts prove or disprove their case, otherwise the question will become anything but conducive to *bon camaraderie*, and, if annually reproduced, be more a nuisance than an advantage to the Society.

I would like to say in conclusion that, although the "National Rose Society" is not progressing "by leaps and bounds," it is steadily and even comparatively rapidly progressing. This year, for the first time in its history, it has passed the 500 in the roll of its members, and if we all would unite by personal efforts, the financial position could easily be made to appear most flourishing.—CHARLES T. GRAHAME, *Croydon*.

## THE MEDAL ROSE.

As one of the medal Judges (not the medal Judge) at the N.R.S. Exhibition, may I say one or two words? I cannot agree with Mr. Raillem that the medal Rose is necessarily a proof of the excellence or otherwise of an exhibition. One swallow does not make a summer, and one Rose does not make or condemn an exhibition. I think it was the general opinion of rosarians that the last Crystal Palace (N.R.S.) Exhibition was an average one, although there was no H.P. of superlative excellence. The Judges may have been wrong, but it was their unanimous opinion that the Gustave Piganeau to which the medal was awarded was the best representative bloom of the H.P.'s. I may, perhaps, be allowed to say, that although we were fully aware that the centre of the bloom was not quite perfect, yet we could not describe it as a flower which "had a decidedly split centre." But I am glad to be entirely in agreement with Mr. Raillem that there is much need of reform in judging the medal Roses. I should much like to see the medal withheld if there were no flower of great excellence. This is the rule as to seedling Roses—why should it not be the rule as to cut blooms? Other improvements which have been suggested would be valuable, but this is one which I should much like to see carried out. In conclusion I would like to say that I hardly think there can be found three men who desire the post of awarding the medals at the N.R.S. or any other Exhibition. The duty is one which no one covets, but which is undertaken in loyal obedience to the orders of the Secretary. It is a work of great importance, and one which should be carried out only by rosarians of great experience. It will be said that there is other work for them to do. Quite so. But let the medal judging be deferred until the general judging is over, and then I fancy that many a bloom which has been held together by worsted will have shot its ephemeral bolt, and the true lasting flower will gain its reward.—HENRY B. BIRON.

## THE ROSARIAN'S YEAR BOOK.

THIS annual, so welcome to rosarians, is just issued. It contains an excellent portrait of its editor, Rev. H. H. D'Ombrian, with appreciative notes historical and floricultural by the Very Rev. Dean of Rochester,



the Revs. H. A. Berners, F. R. Burnside, and J. A. Williams, with Messrs. John Harkness, Edward Mawley, George Paul, and W. H. Williams form a symposium and chat on "Tea Roses" pithily, usefully, and agreeably. The Editor discourses on "French Rosarians" and the "National Rose Society," Mr. Charles Grahame on the "Deterioration of Roses," while Mr. Alexander Hill Gray continues his cheery "Jottings." Mr. Mawley has the closing chapter, as usual, on "The Weather of the Rose Year," in which so much careful observation is displayed. A casual glance through the pages shows that there is plenty of variety in them—plenty of valuable matter and good reading for a shilling. So now let all who love Roses buy the book and be happy, for they can scarcely be completely so without it. It is published by Bemrose and Sons, London and Derby.

[A very interesting letter from Mr. Henry V. Machin, Gateford Hill, Workop, will be published next week.]

### CANKER ON FRUIT TREES.

MR. WALTER KRUSE, in his communication (page 564, December 29th, 1892), loses sight of the fact that those scientists who have investigated this subject consider canker a disease of fungoid origin, consequently only produced indirectly by the composition of the soil in which affected trees happen to be growing. Indeed, it is a question whether the presence of one infected tree in a garden or orchard is not more conducive to the spread of this malignant disease than any quantity of iron oxide or other chemical usually found in mother earth, for from every cankerous growth spores are thrown off in quantity, germinating wherever they effect a lodgment, owing to defects in the bark, and quickly producing those excrescences we unfortunately know too well.

Directly remedial measures have therefore been recommended in preference to indirect ones, scraping and paring the parts attacked, to be followed by liberal applications of paraffin oil or other powerful antiseptic during the months of May and June, when the fungoid growth is most active, being the proposed cure. Those who have advised this method of combatting the pest believe that if energetically pursued year after year it would in time result in the diminution, if not complete extermination of the disease. Has Mr. Kruse tried this remedy?—B. D. K.

MR. KRUSE does well in directing attention to this tantalising and hackneyed subject (*Journal of Horticulture*, December 29th, 1892, page 564). His case is very clearly and plainly stated, except that part where he says, "Apples and Pears are liable in a certain soil (of which an analysis is given) to canker, and Cherries to gum; Plums, Gooseberries, and Black and Red Currants do well." This refers to matters of fact, and may not be (nor are they) questioned; but the statement appears, to me at least, ambiguous, or to imply that because Apple and Pear trees canker and Cherry trees gum in "a certain soil," some analogous disease ought to be expected to infect the Plums, Gooseberries, and Currants, if canker and gum are due to external cause, that is, caused by the attacks of parasitic fungi. This is the other side of the question—What is the cause of canker and gum? Mr. Kruse does not allude to the possibility of these diseases being due to the direct cause and action of parasites, but is strictly empiric, and attributes canker and gum to predisposing cause—excess or deficiency of soil constituents. Predisposing causes—heredity and environment—are no doubt the "root" from whence parasitic infestations spring. Animal or vegetable parasites, however, will attack and thrive if let alone on any and every plant that supplies them with their essential food. That is the point; attack on the one hand, resistance on the other hand, is Nature's undeviating law, and the "weakest go to the wall"—the plethoric and the starved. In this we have the "survival of the fittest;" that plant which becomes located where the soil and environment is best suited to its requirements will thrive the best and longest. So far I cordially agree with Mr. Kruse and the empirics. Cultivators, however, ought not to act on empirical lines, but, like the "boards of health," should take care to remove the predisposing causes of disease, and so safeguard their cultures against attacks or lessen the malignity of parasitic infection. This can only be done by a thorough knowledge of the disease and its origin.

Now, canker on Apple and Pear trees does not infect Cherry, Plum, Gooseberry, and Currant trees, nor any species of *Cerasus*, *Prunus*, or *Ribes*, but is found on Ash, Elm, Oak, and many other trees. That is one reason why "Plums, Gooseberries, and Black and Red Currants do well" where "Apples and Pears are liable to canker"—namely, different plants are subject to different diseases, and have no connection whatever with soil constituents beyond that required in the host for the growth of the disease. Nevertheless a fungus of the same genus as the canker fungus is often found on the dead twigs or branches of Currant and Gooseberry bushes, and is very interesting and beautiful. Almost any small branch or twig which has been lying on the ground in a damp situation a year affords specimen in November, when "the whole surface of the twig is covered from end to end with bright pink prominences bursting through the bark at regular distances, scarcely a quarter of an inch apart. Towards one end of the twig probably the prominences will be of a deeper, richer colour, like powdered cinnabar. The naked eye is sufficient to detect some difference between the two kinds of pustules, and where the two merge into each other specks of cinnabar will be visible on the pink projection. By removing the bark it will be seen that the pink bodies have a sort of paler stem, which

spreads above into a somewhat globose head, covered with a delicate mealy bloom. At the base it penetrates the inner bark, and from it the threads of mycelium branch in all directions, confined, however, to the bark, and not entering the woody tissues beneath. The head, placed under examination, will be found to consist of delicate parallel threads, compacted together to form the stem and head. Some of these threads are simple, others are branched, bearing here and there upon them delicate little bodies, which are readily detected, and form the mealy bloom which covers the surface. These are the conidia, little slender cylindrical bodies rounded at the ends.

"Passing to the other bodies, which are of a deeper colour, it will soon be discovered that, instead of being simple rounded heads, each tubercle is composed of numerous smaller, nearly globose bodies, closely packed together, often compressed, all united to a base closely resembling the base of the other tubercles. If for a moment we look at one of the tubercles near the spot where the crimson tubercles seem to merge into the pink we shall not only find them particoloured, but that the red points are the identical globose little heads just observed in clusters. This will lead to the suspicion, which can afterwards be verified, that the red heads are really produced on the stem or stroma of the pink tubercles.

"A section of one of the red tubercles will show us how much the internal structure differs. The little subglobose bodies which spring from a common stroma or stem are hollow shells or capsules, externally granular, internally filled with a gelatinous nucleus. They are, indeed, the perithecia of a sphaeriaceous fungus of the genus *Nectria*, and the gelatinous nucleus contains the fructification. Still further examination will show that this fructification consists of cylindrical asci, each enclosing eight elliptical sporidia, closely packed together, and mixed with slender threads called paraphyses.

"Here, then, we have undoubted evidence of *Nectria cinnabarina*, with its fruit, produced in asci growing from the stroma or stem, and in intimate relationship with what was formerly named *Tubercularia vulgaris*. A fungus with two forms of fruit, one proper to the pink or *Tubercularia* form, with naked slender conidia, the other proper to the mature fungus, enclosed in asci and generated within the walls of a perithecium. Instances of this kind are now known to be far from uncommon."—(Fungi, Cooke and Berkeley, page 193).

The foregoing comprehensive extract depicts the fungus, *Nectria cinnabarina*, found on Gooseberry and Currant twigs or branches detached and laid on damp ground, also on dead twigs or branches on the bushes. The fungus is also common on stakes of Ash, Maple, Sycamore, and other trees used in mending gaps in hedges. Anyone, therefore, can readily see how a fungus may and does cause the bark to peel off a dead twig or branch, and hang in rags. This the fungus effects by living on and abstracting the substance of the inner bark, so that the bark is separated from the wood, which remains, so far as this fungus is concerned, intact, but exposed to the destructive effect of the weather, and to the inroads of other fungi. *Nectria cinnabarina* will not live on living twigs, for if we put in a stake of a Currant, and the upper or any part of it die, the dead part only affords a fitting soil and a peculiar food for its growth, health, and reproduction.

Now, the fungus *Nectria ditissima* causing canker in Apple and Pear trees, acts similarly to *N. cinnabarina*, with a material difference—namely, it lives and feeds on the living inner bark of Apple and Pear trees, also Ash, Beech, Elm, Mountain Ash, Oak, and other trees. It is not of internal, but of traumatic or wound origin, for its germs cannot pierce sound healthy bark, clean, dense, and elastic; but when the bark is injured by hailstones, sun and frost cracks, punctures of insects and burrowing of larvæ, pecks of birds, bites and scratches of animals, breaking of twigs and erosion of bark by wind, bruises, abrasions, and manipulations, then the spores of the fungus gain access to the inner bark by the wounds, one or all, and set up canker by living on the alburnous tissues, its peculiar food. That is all that is wanted to produce canker on Apple or Pear trees—the wound and the spore of the fungus. When the spores gain access to and become "seated" in the wound they germinate, push their mycelial threads through the live portions of the bark, cambium, and alburnous tissues, living on and abstracting their substances, which causes the bark to die, become fissured and scaly, accompanied by a considerable swelling of the surrounding tissues, forming an unsightly excrescence. Thus established the fungus strives to enlarge the wound, which the tree resists by throwing out an excessive callus around the circumference of the wound, thereby striving to expel the fungus, cover the wood with new bark, and so secure itself against further attacks. But the battle is never in doubt, the fungus always proving the victor. Young shoots and small twigs are encircled in the year of attack, young plethoric trees feed it best and succumb the soonest, sturdy trees and large limbs resist it best and longest, whilst aged trees continue the battle many years, during which they are pitiful unprofitable objects. The mycelium of the fungus extends only in spring and summer, when its food, the sap, is active and cambium abundant, its "fruits" being produced in late autumn, and during the winter it is quiescent.

The attacks of the fungus are not confined to poverty-stricken or aged trees, though it is most malignant on crowded trees in neglected gardens and orchards, yet it has a penchant for young trees and new varieties. Heredity is beside the question, and constitutional susceptibility not well defined; yet some sorts of Apples and Pears have such dense or elastic bark and vigorous healthy constitutions as to resist or throw off cankerous affections. Notwithstanding all cultural effort and selection there are no varieties of Apple or Pear that in all conditions of



climate, soil, and culture are canker-proof. Therefore we are left face to face with the fungus which claims 75 per cent. of the trees in some orchards and not less than 6 per cent. of the trees under the best cultivation as its victims.

Inducements of canker on Apple and Pear trees are crowding and neglect, sticking them in holes in hard soil and stubborn clay, land stagnated with water, arid sand and sterile gravel, a thin crust of soil over chalk, titillating the surface instead of breaking up the hard impenetrable pan chokeful of iron oxides and corroding acids, rich loose soils, low situations, bleak sites, exuberant growth, and improper culture or none. Over these the grower has complete control; therefore, assuming canker to be a preventible disease, it is the cultivator's own fault if the trees are not free, for it is easy to thin crowded trees, clean them, and supply manure. To plant the trees properly in well prepared ground drain waterlogged land, avoid sandy gravelly brash (the greedy maw of chalk), break up pans, render loose soils firm, eschew low and bleak sites, check exuberance by root-pruning, and practise good cultivation all round.

But Nature has to be reckoned with—chills in spring; frosts injuriously affecting the sap vessels; a wet, cold, late season; sappy immature growth liable to damage by severe weather, all aid canker, the admittance of the fungus spores into wounds caused by hailstones severe frosts, and summer heat. How, then, are we to avoid canker? Every empiric has some panacea. Is canker less prevalent now than it was in Shakespeare's time, when it was referred to in almost all plays by the immortal universal tongue? Are the orchards of Albion as fair and prosperous now as at the middle of the current century? I trow not. Look around, and almost everywhere may be seen more decrepit than flourishing orchards, and markets mainly supplied with cheaper and better imported Apples and Pears than the home grower does produce.

Canker has done this. It has, combined with neglect in not planting young, clean, healthy trees in fresh properly prepared soil, with a suitable site, so as to form an orchard that would produce fruit up to the requirements of the time—clean and bright in skin, even in size, and of good using qualities, either for dessert or culinary purposes, by the period the old orchard trees were worn out. What is the remedy? Half a century's experience has convinced me that there is practically but one cure for canker in old orchards—the destruction and burning of the trees branch and root as soon as possible. If the trees are not very old and their stems are sound, it may be worth while to cut off their heads and regraft them with varieties that are found most free from canker, if not entirely so, afford the best crops and bring the most money from the salesman. But it is no use getting young healthy heads on old orchard trees without providing food in the soil for the support of their crops, otherwise the trees will soon cease to bear fruit satisfactorily.

How to cure trees of canker is very simple, indeed as plain as a pikestaff—destroy the fungus and all will be well, not otherwise. No cultivation whatever will render Apple or Pear trees canker-proof. We must do with them as the timber merchant does with that he wants to save from "dry rot" (or any rot), charge its pores with some substance that will prove fatal to any fungus spores that alight upon it. That is the physician's medicine—kill the germs, eliminate the virus from the system, and the patient recovers. Empirics oftener miss than hit the mark, but the experienced practitioner never fails to afford some relief, if not effect a perfect cure. I have tried almost every "patent" for canker—all worthless, time, labour, good land wasted. The fungus, *Nectria ditissima*, "laughs up its sleeve" and prospers, never better than at the present time, for, notwithstanding all our assumed supremacy, we are, as regards parasitical infestions, far behind our continental neighbours and kinsmen in America and at the Antipodes.

It is no use blinking at canker, there it is—scarcely an orchard free, yet nurserymen raise millions of trees, free from speck or blemish, and they are planted throughout the length and breadth of the land, where they fall prey to canker and neglect. How does the nurseryman keep his trees free from canker? By the only way, not having a cankered tree on the spot. Whenever there is a speck of canker off goes that branch and into the fire. I am aware that it is not so in all cases, but I have never seen a cankered tree in any of the large nurseries, and never have received an infected tree from any. There we see them by the million with the current year's wood as thick in degree from the little finger to the thumb without any cankerous affection. Why? Their culture is of the best, land well tilled, judiciously manured, not a canker spot allowed to mature the spores of the fungus and infect the whole neighbourhood; but there is not an orchard of a dozen years' growth in which there is not some canker, and instead of rooting it out it is left to its way, and the whole plantation becomes a wreck before the trees have arrived at full profit. That is the way to grow fungi, not Apples and Pears. It is impossible to grow "two" crops. If canker infest a tree the fruit is worthless, for the fungus lives on the very substance that is necessary for the support of the Apple and Pear and the formation of buds and healthy growths for the production of profitable crops. This may be poor consolation for persons with cankered orchards, and they will perhaps not thank me for these outspoken remarks. No matter; there are some that are "sick" and need a physician to cure their Apple and Pear trees of canker. I will tell them how to do it, if assured that the ground is properly sanitated (drained), the situation healthy, the dietary generous, and cleanliness strictly regarded. If not, these things must be seen to at once, for they are the best safeguard against disease, restoration to health, and its preservation.

Cure for Canker.—1, When any tree shows a canker speck or cankered wound, cut it off and burn it. This should be done not later than October. It will not do to leave it on the tree until early spring, for its "fruits" will have been cast before that time, or there is danger of scattering them about. Therefore, if the tree is to have a new head put on in the spring by grafting, cut it down in the autumn, and consume the cankered parts by fire. 2, Cut off the heads of all cankered trees, and regraft them with varieties that have proved free from the affection. 3, If the tree is young and cankered in the stem cut away the cankered part during summer clean off, that is, just outside the swelling, and evenly and neatly all round, and cover it at once with a plaster of cow manure and clay, and over that a piece of sack to keep it from falling off. Before the autumn the bark will have healed around the wound without any abnormal swelling, but a steady and healthy growth of new bark will be formed for covering over the wound. If the wound still swells abnormally cut it still further and outside the swelling, which remove carefully with a chisel, then apply the plaster. Make no mistake—the canker—the fungus must come out, or no cure can be effected. 4, Spray the trees in February or as soon afterwards as the weather is mild, always before the buds cast their scales, and in dry weather, with modified Eau Celeste, made by dissolving 2 lbs. of sulphate of copper in one vessel, 2 lbs. of carbonate of soda in another, pouring together and adding 1 pint of ammonia (20°), and 32 gallons of water, using a Vermoral Knapsack Pump, and let every part of the tree be coated with the spray, then no fungus can push its germinal tube on that tree without absorbing its last meal. It is good against "Apple scale" and "cracking in Pears," but these require to be coated with the fungicide as soon as the fruit is well set in each case. The spraying need not be repeated to prevent canker, once a year being sufficient, and always before the spores have pushed their germinal tubes into the inner bark, otherwise the spraying is useless, for nothing will destroy the fungus then without killing the trees.

The foregoing is all I know about *Nectria ditissima*—its prevention and cure. It is necessary to state that what is often taken for canker is not that caused by the fungus, for a tree may have wounds without *Nectria ditissima* penetrating the inner bark around the wound, they being entirely innocent of canker caused by fungi.

If the wounds are free from *Nectria ditissima* there will not be any abnormal swelling of the bark around the circumference, but a clean growth of new bark extending over them, in which assistance may be given by a plaster of cow manure and clay over each, and it will keep out *Nectria ditissima* spores.

Apple and Pear trees are sometimes affected by a dry gangrene, caused by frost or improper nutrition—excess or deficiency of soil constituents, and as this and cankered trees may be assisted to cover the wood with new bark and resist fungal attack better by manurial applications. Mr. Kruse's case will be further referred to in another communication.—G. ABBEY.



EVENTS OF THE WEEK.—A meeting of the Royal Botanic Society takes place on Saturday, January 14th. The Committees of the Royal Horticultural Society also meet for the first time this year at the Drill Hall, James Street, on Tuesday, the 17th. On the same day at 3 P.M. the annual general meeting of the Gardeners' Royal Benevolent Institution will be held at Simpson's, 101, Strand, W.C., particulars of which are given elsewhere. A gathering of the Horticultural Club and a Committee meeting of the National Rose Society will likewise take place on Tuesday afternoon at the Hotel Windsor, Victoria Street, S.W.

— THE WEATHER IN LONDON.—There has been a change in the weather in the metropolis since last week. On Sunday it rained, more or less, nearly all the day, and on Monday also rain fell heavily during the afternoon and evening. Tuesday proved fine and comparatively mild, local showers occurring during the afternoon. On Wednesday morning frost was apparent, and at the time of going to press it is fine, but cold, with a north-easterly wind.

— WEATHER IN THE NORTH.—The week ending the 10th inst. has been throughout of a very wintry nature. Snow fell over the country generally, in some places to the depth of nearly a foot; and for a second time this winter we had 24° of frost. Lower readings are reported farther north. Towards the end of the week a thaw took place, but we have 10° frost on Tuesday morning.—B. D., *S. Perthshire*.

— APPLES FROM CANADA.—It may interest your readers to know that 470,380 barrels of Apples have been shipped from the port of Montreal to the United Kingdom during the season that has just closed. This is an increase of 157,043 over the season of 1891.—C.



— **WEATHER AT LIVERPOOL.**—We have again had a very severe week with a heavy fall of snow, the whole country being completely covered in its wintry garb. The weather has been intensely cold. A slight thaw took place on Saturday, and continued over Sunday. A change will be eagerly welcomed.—R. P. R.

— **MR. G. A. DICKSON.**—We are pleased to learn that Mr. George A. Dickson, sen., of the old and well known Chester firm, now trading as Dicksons, Limited, has been placed on the Commission of the Peace for the county of Cheshire. For some years Mr. Dickson has been a magistrate for Chester, and was Mayor in 1885–1886.

— **LONDON PANSY SOCIETY.**—This newly formed Society will hold its first Exhibition at the Drill Hall, James Street, Westminster, on June 6th, in conjunction with the meeting of the Royal Horticultural Society. The schedule, which is included in the Royal Horticultural Society's arrangements for the current year, is comprehensive, there being no less than twenty-eight classes.

— **HORTICULTURAL EXHIBITION AT ISLINGTON.**—A large Exhibition of plants, flowers, vegetables, fruit, plant houses, heating appliances, and horticultural sundries will be held, under the auspices of the Royal Horticultural Society, at the Agricultural Hall, Islington, N., on August the 29th and the three following days. Prizes to the amount of £400 are to be offered, and the schedule will be issued by the Society about the end of March.

— **ROYAL METEOROLOGICAL SOCIETY.**—The annual general meeting of this Society will be held at 25, Great George Street, Westminster, on Wednesday, the 18th inst., at 7.15 P.M., when the report of the Council will be read, the election of officers and Council for the ensuing year will take place, and the President (Dr. C. Theodore Williams) will deliver an address on "The High Altitudes of Colorado and Their Climates," which will be illustrated by a number of lantern slides.

— **THE LARGE BUNCH OF GRAPES.**—A correspondent writes:—"Allow me to state that Mr. Dickson's bunch of Grapes, shown in your issue of December 29th (page 572), not only weighed 26 lbs. 8 ozs. when cut, but would have weighed that at the Show had someone not cut one of the leading points of the bunch the night previously; therefore I have no hesitation in saying that the Arkleton bunch was not only the largest, but the heaviest single bunch on record. I had charge of the vineries at Arkleton, and know what I say is true."

— **THE WEATHER IN STIRLINGSHIRE.**—Another week of very wintry weather; the mean maxima 32°, the mean minima 18°. The frost of Thursday afternoon was very intense. At 3.30 the mercury indicated 21° of frost; it continued falling until about 6.30, when 29° of frost were recorded. Afterwards it gradually rose until next morning when the maxima thermometer was standing at 24°, the highest for the twenty-four hours. A good deal of snow fell on Friday and Saturday, but a thaw set in on Saturday night, and is still continuing, so that by Monday afternoon the snow had nearly disappeared.—G. McDOUGALL, *Stirling*.

— **THE NORTH GALLERY.**—The fifth edition of the official guide to the "North Gallery" at the Royal Gardens, Kew, has just been issued, and a copy should be in the hands of all who are interested in the magnificent collection of beautiful paintings, executed by the late Miss Marianne North. The gallery contains upwards of 800 pictures representing plants, trees, and flowers of nearly the whole civilised world. Detailed botanical and historical descriptions of the paintings are given in the Guide, as well as notes referring to the woods forming the panelled wainscot below the pictures. In addition there is a biographical notice of Miss North, and much matter of interest to gardeners, forming in all a neat volume of 160 pages for the modest sum of sixpence.

— **THE WEATHER LAST MONTH.**—December was a cold month with much frost, especially during the last week, but with a fair amount of sunshine, fourteen days being bright, and two of them were also clear. Barometer—highest reading 30.30 at 9 A.M. on the 16th and 28th; lowest 29.34 at 9 P.M. on 11th. Total rainfall was 1.03 inch, which fell on thirteen days; this is 1.30 inch below the average for the month. The greatest daily fall was 0.28 inch as snow on the 8th. Highest shade temperature, 54° on 15th; lowest, 13° on 26th. Lowest on grass, 7° on 26th and 27th. Mean daily maximum, 40.29°; mean daily minimum, 27.87°. Mean temperature of the month, 34.08°. Wind was in a westerly direction twenty-one days. The garden spring ran 20 gallons per minute on the 31st.—W. H. DIVERS, *Ketton Hall Gardens, Stamford*.

— **THE CALIFORNIAN SEQUOIAS.**—The United States Government is taking measures to save the remaining giant trees of California, the majestic Sequoias. Some of these are believed to be upwards of a thousand years old.

— **COTONEASTERS.**—In the gardens at Holly Lodge, Highgate, I recently noticed some fine bushes of Cotoneasters that were covered with red berries. The branches were laden with hoar frost, and this formed a striking contrast to the fruit.—H.

— **LEE, BLACKHEATH, AND LEWISHAM HORTICULTURAL SOCIETY.**—The annual meeting of the above Society was held at the Working Men's Institute, Old Road, Lee, on Monday, January 9th, 1893. The chair was occupied by John Penn, Esq., M.P., the President.

— **DOUBLE PRIMULAS.**—Messrs. John Laing & Sons, Forest Hill, send us blooms of Marchioness of Exeter (white), A. F. Barron (pink), Annie Hillier (blush), double Primulas. They are full and symmetrical, but the prolonged fogs, we are told, are fast despoiling the plants of their beauty.

— **PRIMROSES AND POLYANTHUS.**—These succeed best with me, whether in the open ground or in pots, if they receive a rich surface dressing of well decayed manure, and those persons who find that manure dug in the ground injures the plants might try the top-dressing.—AN OLD GROWER.

— **LYCHNIS VESPERTINA FLORE-PLENO.**—Some people fail entirely to strike cuttings of this beautiful Lychnis. I am successful by taking cuttings early in May with a heel, or close from the stem, and inserting them in the open ground, protecting them with a cylinder of glass; a bottomless honey jar or lamp chimney answering the purpose well.—W. T.

— **OLD PEOPLE'S GATHERING.**—The Astwood Amateur Gardeners' Society were instrumental in carrying out a most successful gathering of the aged and widows of the neighbourhood on the 30th ult., this being the third annual gathering. About one hundred sat down to a substantial meat tea, and a large quantity of "fragments" were distributed on the following day to the needy. These gatherings are looked forward to as the happy day of the year, when all combine to make it a success. Addresses, music, songs, recitations, and a dance to finish were included in the programme. May the example become contagious through other localities.—J. HAM.

— **WOODFORD HORTICULTURAL SOCIETY.**—A meeting of this Society was held on Tuesday, 9th inst., at the Wilfred Lawson, Andrew Johnston, Esq., J.P., presiding. A paper was read by Mr. G. Laing Paul of Cheshunt, entitled "Apples for Private Gardens." The essay proved very interesting, and was much appreciated by the numerous audience present. An interesting discussion ensued, to which Mr. Paul ably replied. A collection of Apples, staged by the members, added to the interest of the meeting. The essayist was accorded a hearty vote of thanks for his paper, and a similar compliment to the Chairman terminated the meeting.—J. B. RIDING.

— **THE INTERNATIONAL HORTICULTURAL EXHIBITION OF 1892.**—I am sorry to find that very unwillingly I did an injustice to a very energetic worker in all horticultural matters—Mr. Richard Dean—for wherever there is work to be done that affects horticulture he is sure to be found. In mentioning, then, Mr. Marshall as the moving spirit in these Exhibitions, I found that I only looked at one side of the question. Mr. Marshall had everything to do with regard to the judges, and as I was a judge and not an exhibitor I unthinkingly regarded him as "boss," but as Mr. Dean had the very arduous work of arranging the Exhibition, and all can testify to the admirable manner in which it was carried out, making one wish that on some occasions we might have the benefit of his long experience.—D., *Deal*.

— **DEVON AND EXETER GARDENERS' ASSOCIATION.**—The first of what it is proposed to make an annual supper of the Devon and Exeter Gardeners' Association took place on Friday evening, January 6th, at the Turk's Head Hotel. There were about fifty members present. The chair was occupied by Mr. Hope (Messrs. Veitch & Son), the vice-chairs being filled by Mr. T. C. Bartlett (head gardener to Lady Duckworth) and Mr. G. C. Crabbe (representing the amateur gardener section of the Society). A very pleasant evening was spent, and the meeting was acknowledged to be a most agreeable break in the winter programme of the Society. The affairs of the Association were stated to be in a most flourishing condition, and everything in connection with it in as satisfactory a state as could be wished.



— **PRODUCE FROM AFRICA.**—Growers in South Africa are trying to establish a trade in London for their Potatoes and Tomatoes, one farmer offering to furnish 80 to 100 tons of Tomatoes. There appears to be some truth in the statement that "England is the finest market in the world." But why the so-called distress of home growers?

— **RATS AND FRUIT.**—Some time ago a correspondent mentioned in the *Journal* a case of rats taking Gooseberries from the bushes. Where these rodents are numerous near gardens or orchards they do not hesitate to climb walls and trees for the fruit thereon. They appear to have a liking for Pears, and frequently work havoc to the consternation of the gardener or owners.—T.

— **THE WEATHER IN WARWICKSHIRE.**—The current year was ushered in with real wintry weather. On January 1st we registered 9° of frost, and on the 3rd and 5th 20°. A slight fall of snow took place early on Friday morning, 6th inst., and during the afternoon and evening of the same day several heavy snowstorms increased the depth upon the ground to 3 inches.—H. D.

— **AMERICA'S NATIONAL FLOWER.**—The national flower question has been brought before the United States Congress. Congressman Butler, of Iowa, has introduced a resolution that the Pansy be adopted as the national flower, and that the stars on the national flag be arranged in the form of this flower.

— **WEATHER IN MID-WALES.**—We have had some very severe weather here for the last fortnight, commencing on the 23rd of December. We registered from 16° to 25° of frost every night. Once we had 26° and twice 25°. The first week of it was very quiet, no winds whatever; but from the 5th to the 9th the wind was very strong and bitterly cold, and snow fell on the 6th and 7th heavily, and at the time of writing the weather seems to be breaking up.—R. C. WILLIAMS, *Crosswood Park, Aberystwith*.

— **COLOUR AND QUALITY.**—It is singular to see two correspondents (Messrs. H. S. Easty and "A. D.") in your issue of January 5th suggesting, against popular opinion, that yellow is a property in fruit and vegetables. I have for many years been addicted to that taste in all our garden fruits and Potatoes. The former are often not only the most luscious to eat, but are so when cooked or made into jam. In Gooseberries I never found an exception, consequently have a predilection to yellow coloured fruit.—W. T., *Blantyre*.

— **GARDENING APPOINTMENTS.**—Mr. Alexander Penhorwood, for the past eight years gardener to W. H. Budgett, Esq., Stoke House, Bristol, has been appointed gardener to P. D. Pranker, Esq., The Knoll, Sneyd Park, Bristol. Mr. E. Trollope, late of The Firs, Lec, Kent, has been appointed gardener to J. Foster, Esq., Combe Park, Whitechurch, Reading. Mr. Geo. E. Weeks, for the last five years foreman to Mr. G. Inglefield, Tedworth House, Marlborough, has been appointed head gardener to R. D. Cleasby, Esq., Pennoyre, Brecon, South Wales.

— **UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.**—The quarterly meeting of this Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last, Mr. W. P. Thomson in the chair. The Society is making good progress, fifty-three members having been elected during the past year. Three members are on the Sick Fund at the present time. One member, who has been ill recently, was allowed 10s. from the Convalescent Fund. The amount of deposit standing to the credit of a non-paying member was granted at the last meeting in accordance with Rule 14, the said member having ceased to pay since 1869, and who has now reached sixty years of age. Messrs. Dixon, Gunner, and Puzey were elected auditors for the past year's accounts. The usual vote of thanks to the Chairman ended the meeting.

— **THE WEATHER DURING DECEMBER AT RIPLEY, YORKS.**—December was ushered in by severe frost, which continued until the 14th; from that date to the 21st we had a spell of very mild weather. On the 22nd frost set in again and continued very severe to the end of the month. On the 29th, 30th, and 31st we registered 24° of frost. The rainfall was very light, the total fall being only 0·67 of an inch, which fell upon eleven days, the greatest daily fall being 0·14 of an inch on the 8th. Mean reading of barometer, 29·94. Mean maximum temperature, 38·5°; mean minimum temperature, 22·6°; mean temperature of month, 30·5°. Fog was prevalent from 19th to 22nd. No snow fell during the month to spread its protecting mantle over the occupants of our borders.—J. TUNNINGTON, *Ripley Castle Gardens*.

— **THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—A general meeting of the members of this Institution will be held at "Simpson's," 101, Strand, on Tuesday, 17th inst., at a quarter to three in the afternoon, to confirm the special resolution of the 20th day of December, 1892, relative to the name of the Institution. The fifty-fourth annual meeting will be held at the same place and on the same date, for the purpose of receiving the report of the Committee and the accounts of the Institution for the present year, electing officers for the ensuing year, and other affairs; and also for the purpose of placing twelve pensioners on the funds. The chair will be taken at three o'clock, and the poll will close at five o'clock. No subscriber can vote whose subscription for 1892 is unpaid on the day of the election.

— **ROYAL PATRONAGE FOR THE GARDENERS' ORPHAN FUND.**—We have pleasure to announce that Her Royal Highness the Princess of Wales has sent a cheque for 10 guineas to this charity. At the last Committee meeting donations to the amount of £66 were announced, including £20 from the Reigate Chrysanthemum Society, a similar amount from Mr. Todd (obtained by the sale of flowers at the Edinburgh Show), £9 from the Rugby Show, £5 from the Carnation and Picotee Society's Show, Edinburgh, with smaller amounts from other collecting boxes. There are forty-nine pensioners on the Fund, and fifteen candidates for eight vacancies. The annual meeting will be held on February 15th. Sir James Whitehead, Bart., M.P., was elected a Vice-President, and Mr. R. Ballantine succeeds the late Mr. C. H. Sharman on the Committee.

— **THE R.H.S. COMMITTEES.**—Amongst new additions to these Committees for the present year (see page 32) are one or two in whom the readers of the *Journal* should feel special interest. Mr. Molyneux will be able on the Floral Committee to give the assistance of his wide knowledge of Chrysanthemums at the autumn meetings, and we hope sometimes for other purposes in the summer. So also will another new member, Mr. C. E. Shea. We are specially pleased also to notice that Mr. A. Young of Abberley Hall, and Mr. W. Iggulden of Marston Gardens, have been added to the Fruit Committee. It is to be deplored that distance prevents these and some other able gardeners, such as Mr. S. T. Wright of Glewston Court, Mr. Divers of Ketton Hall, Mr. McIndoe, and others from only rarely attending. All the same, we are sure they will receive a very hearty welcome when they can do so. Mr. Burrell of Claremont, and Mr. Goldsmith of Leonards Lee, also are new members of the Fruit Committee.—D.

— **WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.**—A meeting of this Society was held on Thursday last in the Mechanics' Institute, under the presidency of Mr. H. M. Coates. Mr. R. Todd, gardener to Holbrook Gaskell, Esq., Woolton Wood, gave a very interesting address on the Ouvirandra and other curiosities of plant life, including some useful cultural hints. Specimens of the Ouvirandra or Lattice-leaf plant, *Sarracenia Drummondii* and *purpurea*, *Cephalotus follicularis*, *Dionaea* or Venus' Flytrap, and *Nepenthes Hookeri* were on the table, together with the following varieties of Ferns: *Trichomanes radicans* (Killarney Fern) and *T. reniforme*, *Hymenophyllum*, *Rhodopteris peltata* or the Umbrella Fern. Hearty votes of thanks to the Chairman and lecturer were accorded. Mr. D. H. Johns, gardener to W. Revill, Esq., Hill House, Wavertree, brought a fine dish of Conference Tomatoes, for which the Society's certificate of merit was awarded.—R. P. R.

— **SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, IN DECEMBER, 1892.**—Mean temperature of month, 34·0°; maximum on the 18th, 34·0°; minimum on the 27th, 10·6°; maximum in the sun on the 19th, 87·6°; minimum on the grass on 27th, 6·5°. Mean temperature of air at 9 A.M., 32·7°; mean temperature of soil 1 foot deep, 37·5°. Nights below 32°; in shade, twenty-two; on grass, twenty-seven. Total duration of sunshine in the month, forty-eight hours, or 21 per cent. of possible duration. We had eleven sunless days. Total rainfall, 0·44 inch. Rain fell on nine days. Average velocity of wind, 8·2 miles per hour; velocity did not exceed 400 miles on any day, and fell short of 100 miles on ten days. Approximate averages for December.—Mean temperature, 37·1; sunshine, thirty-two hours; rainfall, 1·97 inch. Very dry and cold, but sunny and calm. A spell of frost at the beginning of the month, and another and sharper one at the end, but with practically no snow. The rainfall was smaller than in any corresponding month during the last sixteen years, but we have had three colder ones.—J. MALLENDER.



— **MASTERS AND WORKMEN.**—On Wednesday the 4th inst., the employés of Messrs. Thos. Rivers & Son were entertained to supper in one of the large houses, which was decorated for the occasion. About ninety-six men sat down to a substantial meal, the catering being in the hands of Mr. and Mrs. Camp. Mr. T. F. Rivers, in response to the toast of Messrs. Rivers & Son, said he was most happy to see all his men around him, and that it was owing to them and to their careful attention to their duties that the name of Rivers was so well known, not only in England, but in every quarter of the globe. He trusted that the friendship which existed would continue for years to come.

growers of the north are cordially supporting the Society, and it is hoped also that the southern growers will be able to come in full strength. Tamworth is easily reached, being about half way between Birmingham and Derby.

#### KEEPING GRAPES.

THE plan I adopt for keeping late Grapes is very simple, and I find it answers well, as I always keep them fresh and plump in the berry till the early varieties are ready for cutting, which, as a rule, are ready about the middle of May.

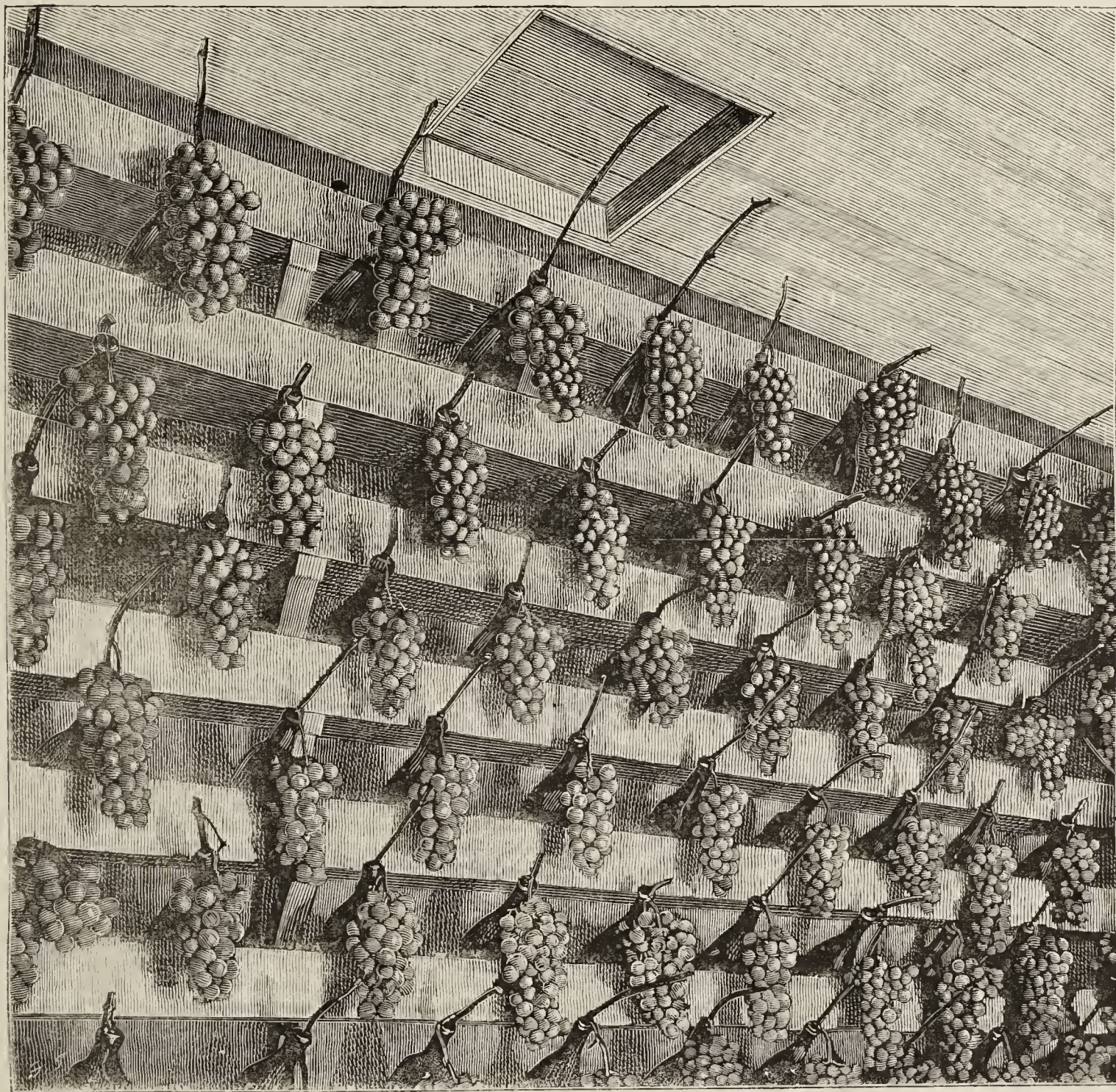


FIG. 5.—A PORTION OF THE GRAPE ROOM AT FLOORS CASTLE.

— **THE MIDLAND COUNTIES PANSY SOCIETY.**—The schedule of prizes for the third annual Exhibition of this Society has been issued, and we note that the Exhibition for 1893 is to be held at Tamworth, Mr. W. Dean still remaining the Hon. Secretary. It is the most liberal schedule of prizes ever offered for Pansies and Violas alone, the large sum of £64 being devoted to prizes, chiefly in cash, but some medals are offered. In addition there are special prizes for lady exhibitors for a wreath, cross, basket, or spray of Violas or Pansies, handsome prizes of jewellery to the value of £14 being offered for these separate classes. Whilst several of the classes are for the growers in the midland counties only, a goodly number are open to the United Kingdom; and it is hoped that something in the character of a national meeting of growers will result, and that a very large display of blooms will be secured. The

It will be seen by the photograph that the bottles are fixed in shelves made purposely for keeping Grapes. The bottles are filled with clean water, with two or three pieces of charcoal in them to act as a purifier. Many recommend sugar, saying it adds flavour to the Grapes; but the point I aim at is to try and get the sugar in them before they are cut.

I always start my latest vinery on March 1st, and that gives me a good chance of getting the Grapes well coloured and ripe by the end of September. Grapes that are not finished by that time stand a poor chance of ripening properly, and I find that those well ripened keep much the best.

Thinning is another chief point in keeping Grapes. I always thin my Grapes well, especially those that are for keeping, leaving no inside



berries, as I find the thinner they are, in reason, the better they keep. I always like to see the berries stand clear of each other, and if properly thinned, Lady Downe's will, as they are short in the stalk and will bear their own weight.

When cutting Grapes for keeping I always cut plenty of wood with them, say a foot to 18 inches beyond each bunch, and as much as possible from the spur to the bunch, leaving two or three buds to prune to. I think this adds greatly to the keeping of the Grapes. With some bunches it is impossible to get the wood long enough to go into the bottle—that is from the spur; in that case I find they keep just as well by inserting the wood from the bunch or the lateral end in the water.

I make a rule of examining my Grapes once a week, filling all the bottles that require water, and cutting out all bad berries. The Grape room is kept dark and cold, never using artificial heat only during damp or very frosty weather. By following that plan I have kept Lady Downe's Grapes till June 10th fresh and plump in the berry.—*C. STREET, Floors Castle Gardens.*

[The illustration (fig. 5) represents but a small portion of the end of the Grape room. The photograph was out of proportion, and if the whole of it had been engraved, it would necessarily have been so reduced as to spoil the effect. The woodcut, however, portrays Mr. Street's method of keeping Grapes. He sent us a model bunch with fine berries admirably thinned.]

## THE ROYAL HORTICULTURAL SOCIETY.

### COMMITTEES.

THE arrangements of the Royal Horticultural Society for 1893 have just been issued, and, apart from the customary periodical meetings, a special four-days Exhibition will be held at the Agricultural Hall, Islington (see page 28), in addition to the usual Temple Gardens Show, which takes place on May 25th and 26th. An Exhibition will also be held at the Chiswick Gardens on July 11th, and the respective Shows of the National Auricula, Carnation, and Rose Societies take place as usual at the Drill Hall, Westminster. A new feature will be the Exhibition of the recently formed London Pansy Society alluded to on page 29, which will be held on July 6th. We publish the names and addresses of the members of the various Committees for the current year.

### SCIENTIFIC COMMITTEE.

*Chairman.*—Sir Joseph Dalton Hooker, K.C.S.I., M.D., C.B., F.R.S., The Camp, Sunningdale.

*Vice-Chairmen.*—Dyer, W. T. Thiselton, C.M.G., F.R.S., Royal Gardens, Kew; Foster, Professor M., Sec. R.S., Great Shelford, Cambridge; Masters, Maxwell T., M.D., F.R.S., V.P.L.S., Mount Avenue, Ealing, W.

*Hon. Secretary.*—Rev. Prof. G. Henslow, M.A., F.L.S., F.G.S., Drayton House, Ealing, W.

Baker, J. G., F.R.S., Royal Gardens, Kew.

Balfour, Prof. I. B., F.R.S., Botanic Gardens, Edinburgh.

Blandford, W. H. F., M.A., F.E.S., 48, Wimpole Street, W.

Bonavia, Dr. E., 5, Harrington Mansions, South Kensington.

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## PROGRESS IN PRIMULAS.

It would be difficult to write anything fresh about many flowers were they standing still, for references have been made to them by able pens "many a time and oft;" but when the march of improvement still goes on it is not without interest to come back to them occasionally, if only for the sake of reporting progress. What of originality could be introduced, I wonder, into a dissertation in praise of Primulas were this consideration disregarded? Their beauty has been described, their points of merit enlarged upon, their usefulness proclaimed in one unending chorus, idle, therefore, the attempt to say aught that is

fresh about them without taking account of the past and present work of the hybridiser. When, however, this field is entered upon abundant material is found for comment. With the Primula there is no marking time, for even when after a long course of development the raw recruit has been turned into the smart cavalier, much polish remains to be put on.

There is one fact which stands out as the most remarkable of all in connection with the marvellous improvement effected in Chinese Primulas, and it is their production from one species. We often talk loosely of hybridisation, but, properly speaking, our Primulas are not hybrids at all; they are cross-breeds. Think what this means. In crossing distinct species we pave the way for variations, breaking up, as it were, certain lines of form and colouring which Nature has laid down, and consequently leaving no room for surprise if the disturbance finds expression in other ways than those aimed at when the hybridisation was effected. But variation by change of environment, by selection, and subsequently by cross-breeding, is a different thing, and the results are often such as astonish even the most experienced observer. Here Nature has not, so to speak, been thrown off her balance by the abrupt intermingling of different bloods. The capacity for improvement was inherent, not imparted, and what has been done is in no sense a creation, but simply a development of latent resources.

The interest of this reflection deepens when an opportunity is presented of seeing the best examples of the developing process side by side with their modest original, and it is only natural that this should add emphasis to any conception that may have been formed by reading alone. In the case of many plants the lesson is denied, for the (to us) primordial form has disappeared; but in that of the Primula it may be learned by anyone who visits the nurseries of Messrs. Sutton & Sons at Reading, where such great work has been done in the improvement of this valuable flower. In the same house which shelters some of the most remarkable examples of their success, plants of the original *Primula sinensis* are blooming, and a striking contrast is presented between it and such magnificent varieties as Pearl, Purity, and Ruby King. For actual quality of flower it may be measured with, let us say, *P. obconica*, although quite distinct from that useful sort, and this will serve to indicate the great disparity between it and its brilliant offspring. It is not suggested that *P. sinensis* is devoid of beauty, very far from that. Its flowers are five-petalled, almost star-shaped, and of a delicate lilac-blush tint. The habit is neatness itself, and altogether the plant is so pleasing that if met with for the first time it would certainly invite comment and attention. But as it is, it is impossible to dissociate it from the varieties which have sprung from it, and instead of studying its points of merit the natural impulse is to seek out resemblances to the improved forms. In this connection it is interesting to note the variations in both foliage and flowers; even in a small batch of plants there are distinct shades of colour, although no marked divergences, and in the leaves there are clear indications of variation from the palmate to the fern-like form. So far as hybridisation is concerned it is curious to note that hitherto *P. sinensis* has refused to mate with any other species.

A new interest is added to the inspection of the choice varieties raised at Reading after thus making acquaintance with the parent form. Cross-breeding still goes actively on, and the results are, in many cases, as unexpected as they are interesting. The erection of three splendid new houses has permitted of the further enlargement of the previously extensive collection, this step having been rendered necessary by the increasing demand for seed. The fresh structures are models of design, material, and workmanship. One of them is devoted to a trial of all the varieties offered, together with many others, so that not only are errors in the supply of seed guarded against, but every claimant for attention is tested on equal terms with the standard sorts. From a cultural point of view the collection is almost beyond praise. The thousands of plants are full of health and vigour, and although there are natural variations in habit and size, the general characteristics are compactness of growth, broad stout leafage, bold trusses borne well up above the foliage like the flowers of a good Begonia, large, substantial, well-formed flowers, and clear, decided colours. It is impossible to conceive a fastidiousness so great as to be unable to find abundant food for pleasure and satisfaction in a collection of such extent, diversity, and beauty.

The single palmate-leaved varieties number some of the loveliest Primulas in cultivation. Pearl is an old favourite, having been out since 1879; but it is still one of the best, its fine truss and large, pure white, beautifully fringed flowers awakening deep admiration. Ruby King, another of the firm's early triumphs, indeed the one which first brought their work amongst Primulas into prominence, is also in the front rank yet; and taking into consideration its free blooming and rich distinct colour, it may be expected to remain there for many years to come. It was certificated in January, 1879. Giant Crimson and Giant White are fitting illustrations of the advance on the old varieties rubra and alba, while Brilliant Rose and Giant Reading Pink are perfect examples of their own shade of colour. The latter is the result of years of work. It is a magnificent variety, having a noble truss and fringed flowers of great size. Reading Blue is not only rich in colour, but has the prevailing qualities of its associates. There are half a dozen Fern-leaved varieties of conspicuous excellence. First may be noted Purity, the Pearl of the section, with its large, pure white flowers and fine truss. The chaste blooms of this beautiful Primula are admirably shown up by the dark foliage. Snowdrift is particularly valuable on account of its rapid growth, earliness in blooming, and profusion. It is flowered in



three months from the time of sowing, covers itself with blossom, and remains in beauty for a very long period. Gipsy Queen and Rosy Queen are a delightful pair, the former being conspicuous from its very dark foliage, and the latter for its very dwarf and compact habit, but both have charming flowers. Sutton's Blue is of vigorous growth, has a fine truss, and possesses a lovely shade of colour.

The doubles exhibit the same general qualities as the singles. They have been improved up to a point beyond which it is very difficult to get. All the varieties are remarkable for their huge trusses of bloom and fine colours. Double Rose is particularly beautiful, its rosy blush or Miss Joliffe Carnation hue making it a universal favourite. Double Scarlet and Double Crimson are both exceedingly rich, and they have large, full flowers with which to display their brilliant colours to the best advantage. Double White and Double White Fern-leaved are both splendid varieties, having large, well-developed individual blossoms united in a handsome truss. Gem is also a charming Primula, its foliage alone rendering it attractive. In habit it is perfect, and the rosy flowers are borne lavishly.

Besides those grown under name there are some beautiful crosses, the character of which cannot be satisfactorily fixed. These are sold as special mixed hybrids, and considering their distinct and meritorious character they ought to prove an investment of no small interest. In thus referring to the mixtures it may be well to note that the seed sold as such is in reality a mixture of the different varieties grown, not of the red and white alone. There is also a distinct moss-curl section growing up which in course of time is sure to be widely sought after. The plants have curled and cut moss or parsley-like leaves.

An opportunity should be sought of making a personal inspection of what Messrs. Sutton have done and are still doing with Primulas at Reading. As the large collection is grown with a view to providing an effective display over a long period it is impossible to catch its full beauty at any one particular time, but at no period during the season can it be seen without a magnificent spectacle being admired. Cyclamens and Cinerarias (to which reference may be made on a future occasion) supplement it, and the three classes vie with each other in beauty and quality.—W. P. W.

## DISCUSSION ON POTATOES.

### QUALITY *versus* SHALLOW-EYED TUBERS.

I HAVE in my day devoted considerable time in raising and cultivating seedling Potatoes. I have always aimed at shallow-eyed tubers, but although I have several of them for years untouched with disease I never find a shallow-eyed Potato up to my standard of quality. The quality of Potato I prefer is a tuber that boils or cooks soft yet firm, and of a slightly sweet taste, and if the flesh is yellowish it is sure to be a Potato for the million. Give me quality first, then beauty, or in other words, I prefer Potatoes serviceable for the dinner table rather than the show board.—W. T., *Blantyre*.

### A TREAT.

DISCUSSING the merits of Potatoes with an extensive grower of them, the question arose as to whether the good old sorts of long ago had really been superseded in quality. "You don't grow the old favourites now, I suppose?" quietly remarked my friend; "I will send you a few as a treat." What will the modern men, the men up to date in Potato matters, think of his taste when I name the varieties—Dunbar Regent, Lapstone, Fortyfold? and what will they think of my taste also when I say the Potatoes were a treat indeed, and distinctly superior in texture and flavour to at least fifty more or less new varieties that were prepared by the same cook? I should like to know of three others to beat them.—PAT MURPHY.

### YELLOW-FLESHED POTATOES.

I HAVE raised seedling Potatoes for more than half a century, and always found those having yellow-coloured flesh or skin the finest flavoured, unless the yellow tuber was a sport, in which case the flavour was inferior; but I can no more explain the reason of this than that yellow is otherwise an indication of quality and fine flavour. Like Mr. Robt. Fenn, I strive for quality first, next for quantity, and lastly for appearance, then I make a strong effort to combine the three. I am sure I endorse the opinion of thoughtful persons in saying that there is too much pandering to the taste for showiness apart from edible and nutritive properties in Potatoes.—W. T., *Blantyre*.

### THE BEST VARIETIES.

I AGREE with Mr. Easty, page 5, as to the advisability of having a discussion on Potatoes as well as on Apples. The great thing in invoking discussion is to secure something like sequence or continuity, and to avoid rambling. We may discuss the merits of early and of late Potatoes, especially of varieties, also of frame and pot culture under glass; then of best forms of planting and culture for early varieties and for late varieties, suitable manures, best varieties for exhibition, &c., and in that way cover very wide ground. Suppose we start by asking what are the best half dozen of first early varieties? Of course these will be all white-skinned and largely kidney, although some may be of the round section. What difference of opinion will the naming of but half a dozen first earlies evoke. Very much will depend upon knowledge. Amongst the best, Laxton's Early Short Top, mentioned by Mr. Easty, is one, a first-class variety for frame and pot culture or for close planting on

warm borders. It is an oval kidney shape, walnut-leaf top, a remarkable cropper, and excellent quality. This has for two seasons at Chiswick proved to be one of the very best earlies. Albert Victor (Sharpe) everyone now knows of, and is one of the very best. Then King of the Earlies (Ridgewell) is, as was shown at Chiswick, a first-rate Ashleaf Kidney. It is a seedling variety, heavy cropper, and so far as has been seen of it, one of the best of the Ashleaf section. Guardian (Dean) is an early kidney not much known, but Mr. Lockie of Windsor can speak of it in very high terms as a first-class early kidney for warm soils. Ringleader (Sutton) is one of those good flavoured nutty flesh sorts that are so valuable for early work. It is a heavy cropper, and very early. Then Duke of Albany, otherwise White Beauty of Hebron, is a capital first early for borders or for small gardens and allotments. I prefer this Potato to Puritan, and think that no American kind excels it.

Then, turning to second earlies, there are Suttons' Seedling, and also their Early Regent, both delicious varieties and capital croppers, flattish round in shape, and very good form. Snowdrop is a kidney of such good reputation that it only needs mention. Snowball (Dean) is a short-topped handsome early round, that is specially good for garden culture. Fidler's Prolific and Snow Queen are further two capital rounds in this section, both fine croppers and of great excellence. A midseason selection must include such fine varieties as the red Reading Russet, the purple The Dean, the white Schoolmaster, Covent Garden Perfection, Windsor Castle, and The Daniels, a very fine white kidney and a heavy cropper.

Then, for a later or main crop selection there is our old friend Magnum Bonum, Suttons' Satisfaction (a very fine flattish round), The Bruce, Reading Giant, Stourbridge Glory, and Chancellor. I think it will be found very difficult to beat this selection.

It will be seen that I have gone far beyond my original suggestion, and have mentioned twenty-four varieties, covering the entire year. There can be no doubt whatever but that to those engaged in Potato culture the subject is of extreme interest. In earlier days when I was engaged in raising new varieties and in growing them I naturally had my favourites. Now I have none whatever, and, therefore, can recommend any most impartially. I do, therefore, think that the twenty-four varieties named can hardly be excelled for covering a long season, for general goodness of quality, or for abundant cropping.

Were I about to select the best twenty-four for exhibition I should make considerable changes, as for instance, the first earlies would hardly be included, as exhibitions of Potatoes are rarely held early in the season; whilst in the autumn many of the later varieties give much finer and handsome tubers. Taking the four sections of white round and white kidney, coloured round and coloured kidney in this order, I should give of the former six—viz., London Hero, Windsor Castle, Schoolmaster, Satisfaction, Prime Minister, and Snow Queen. Of white kidneys, eight—viz., Snowdrop, The Canon, Reading Giant, Supreme, Chancellor, Duke of Albany, Magnum Bonum, and Cosmopolitan. Of coloured rounds six—Reading Russet, King of the Russets, The Dean, Vicar of Laleham, Lord Tennyson, and Radstock Beauty; and of coloured kidneys four—Beauty of Hebron, Reading Ruby, Edgcote Purple, and Mottled Beauty, a purple flaked Lapstone.

I have before me a list of some sixty varieties all recommended for exhibition. Whilst it is very obvious that such a list would only better anyone wishing to grow a couple of dozen sorts, it is equally certain that at least one-half are now seldom seen at exhibitions. Very many of the old show sorts are now regarded as comparatively small, or else of indifferent quality. So far as is possible, all these I have excluded from the latter list, even such a still highly favoured show variety as the old International, being excluded. Its place is now most worthily taken by the Canon. It is a matter of much importance that distinctness should be found in collections of Potatoes. Too much alike is often the complaint, and it was a marked cause for complaint at the great Earl's Court Potato Show. Whilst of no special importance so far as mere eating varieties are concerned, it is of material consequence when Potatoes are exhibited in collections, and the Magnum Bonum type of kidney specially give trouble, and so also do the long flattish rounds, for these are so alike that some half dozen that have diverse names, but could all have been picked from the same sort, are often seen in the same collection. Coloured varieties are fewer, and are also more distinct; indeed there is hardly two of these that will be confounded one with another, except it be, perhaps, Beauty of Hebron and White Elephant, and both these should now be tolerated in the same collection. Those who draw up schedules should insist upon absolute distinctness of character in the tubers of each variety shown being beyond doubt, and that may easily be secured, especially in the case of twelve varieties. Judges at small shows should never allow any one sort to be shown as both kidney and round, and in all cases should make distinctness of the first importance.—A. D.

### SOIL AND VARIETIES.

THE suggestion of Mr. Easty, page 5, is quite opportune. This vegetable is undoubtedly the most important of any. In all gardens, those of the rich especially, flavour in a Potato ought to be the first consideration; but I am afraid it is not so, there is too much hankering after appearance. It is surprising how the quality of varieties change in various soils, what will be a success in one garden will be quite a failure in another. Heavy soils are the worst to deal with for Potato culture. Take, for instance, the variety Vicar of Laleham; in light soil the tubers are of good quality, whereas in that of a heavy retentive



character the tubers boil like soap. If those who take part in the discussion would, in naming favourite varieties, state the kind of soil in which they are grown, such information would be really valuable. In common with many others I used to pin my faith on Myatt's Prolific for the earliest supply in strong soil, but it is superseded by Ringleader (Sutton's) both in earliness and flavour. It is good when fresh dug, and retains its quality for months. Sutton's Seedling is a capital second early, although in some seasons it is rather liable to disease. Windsor Castle provides one of the finest late Potatoes we have. Lady Truscott I look upon as the best of the midseason kinds. Where exhibiting is not practised half a dozen varieties are quite sufficient to supply the wants of a good sized family. The soil here is heavy, cold, and retentive, and not calculated to bring out the highest qualities of any Potatoes.—E. MOLYNEUX, *Swanmore Park*.

#### THE COST OF MANURING FRUIT TREES.

As "W. P. W." seems bent on misunderstanding my queries I do not desire to occupy your space with further useless discussion. I must, however, conclude by pointing out, in justice to myself, that I never asked nor wanted any information respecting my own trees. On the contrary, all I wished was to ascertain, if possible, the total cost of applying certain artificial manures recommended by "W. P. W." to particular trees whose fruit he had held up to the admiration of your readers. This apparently simple inquiry has caused him to fly off at a tangent, complaining, amongst other things, of the vagueness of my question, while overlooking the fact that it was a verbatim quotation from his original letter! Your correspondent appears unable to supply the only information I sought, or would be of any practical value.—B. D. K.

[Our correspondent's reply to the above note is as follows:—"My simple parallel about the suit of clothes, it seems, has failed to enable 'B. D. K.' to comprehend the point of the matter. I will give him the A B C of it. If fertilisers are applied at the rate of 4 ozs. to the square yard, a tree covering 10 square yards will want 2½ lbs.; but one covering 5 square yards will only require 1¼ lb. The quantities being different the expense will also vary; consequently when he asks the cost of manuring trees, the only answer is that it depends upon their size. The quantities of the manures named would enable those readers who wished to use them to easily determine the cost per tree to themselves. I know to a farthing how much it costs to manure trees when I do them myself. I hope 'B. D. K.' now understands. The matter is worked out very much on the same principle as that two and two make four. Whether the trees referred to are your correspondent's, mine, or someone else's does not alter the rules of arithmetic.—W. P. W."]

#### FORMATION OF SCHEDULES.

I AM very pleased to see that this matter is being taken up and ventilated in the *Journal of Horticulture*. No doubt that within the next few weeks schedules representing most of the horticultural exhibitions of the kingdom will have to be considered and revised. It is very necessary that committees entrusted with this important work should not only carefully consider each class upon its merits, but every line and every word should be well thought out and carefully defined in order to prevent as far as possible any disputes and misunderstandings which may arise between exhibitors and officials.

Exhibitors, too, will do well to carefully peruse all the matter contained in the schedule. Looking through the classes and noting the amount of prize money is not sufficient; but the rules and regulations under which such prizes are awarded should be well considered. Anyone officially connected with horticultural societies knows very well what an amount of correspondence may be spared them if only a little more care and attention were bestowed upon this matter by exhibitors.

The mixing of advertisements between the leaves of the schedule is a custom that should not be sanctioned under any circumstances whatever. I consider that every word of matter belonging to the Society is of too great importance to allow anything being put in that is at all likely to draw attention from it. No doubt advertising in schedules is a source of income which many societies will not readily abandon; but if it is necessary to have advertisements, then I say by all means let them be kept quite separate and distinct from schedule matter, and divide them by a blank page. Personally I prefer to see a well printed and neatly bound schedule, containing no extraneous matter whatever, rather than one so voluminous that requires so much perusal to find what you are looking for.—JAMES HICKS.

#### TINNEA ÆTHIOPICA.

WITH this note I am sending you a flowering spray of a most beautiful stove plant, and one moreover that appears to be exceedingly scarce. As a rule *Tinnea æthiopica* (fig. 6) commences to flower early in the year, and by the beginning of February the plants are at their best. This year, however, my plants are flowering much earlier than usual, which, in my opinion, enhances their value considerably.

Not only is the plant elegant in habit, and the flowers richly and

distinctly coloured, but they also possess a delicious fragrance very strongly suggestive of Violets, so that a few specimens in bloom will agreeably perfume a moderately large house. When, in addition to these qualities, the season of its flowering is considered, further recommendation is needless. The corolla is two lipped, the lower lip being of a fine maroon colour, and the upper one more of a rich crimson hue. The calyx is large, slightly inflated, and pale green. The flowers are freely produced in axillary clusters at the upper portion of the shoots.

The culture of the plant is easy. A stove temperature is required, and this may debar many amateurs from growing it. A light, rich compost of loam, leaf soil and sand, suits the plant well; and the pots



FIG. 6.—*TINNEA ÆTHIOPICA*.

should be carefully drained. Cuttings of the young shoots strike readily under a bellglass in a little bottom heat.—F. M. B.

#### DISCUSSION ON APPLES.

##### D'ARCY SPICE APPLE.

I HAVE been much interested in the notes on Apples which have appeared in the *Journal*, and I have patiently waited for the above variety to be mentioned. I do not think this Apple is well known, but those who once try will never fail to grow it. It is by no means beautiful in appearance (I have had very ugly fruit on two trees I had in Essex, but here in Suffolk on a clay soil it is not so bad), being usually of a russety green colour, but in hot summers it carries a dull red flush on the sunny side. The most important recommendation consists in the delicious taste the fruit has in the months of February and March, for no Ribston Pippin is better, and it is the best follower to that old favourite. It is a very fair cropper, and the tree a good grower, being clean and healthy. It commands the highest price of all in districts where it is known, but I found it useless to send to London, where I suppose it was unknown, and was not sufficiently highly coloured for that market. It is not so hard in texture as the Ribston Pippin, and therefore will find favour among people who cannot digest hard Apples.

##### FEARN'S PIPPIN.

This Apple is called hereabouts (Suffolk) "None so Pretty," and I think it fairly comes up to this name, being very pretty indeed, but the taste does not come up to appearance. It is, however, very salcable, and, being a fair cropper, it is profitable to grow for market. I find it is not such a clean grower as might be desired on my heavy soil, but doubtless



it is better elsewhere, for I believe it is very largely grown about London. And now, Mr. Editor, as "Apple notes" have been so much appreciated, why not Pear notes?—H. S. EASTY.

#### APPLES ON THE PARADISE STOCK.

FROM the note by Mr. Turton (page 14) regarding the variety Northern Spy, I learn that the tree in question is growing on the Paradise stock, and in a stiff cold clay. Is it not generally understood that soil of this character is unsuitable to the growth of this stock? At least this has been my impression. Many persons assert that no other stock will give the same early results of fruit bearing as the Paradise, but that is a mistake, as I can prove. Nothing could be better than the crops of fruit obtained here the second and even the first year of planting bushes growing on seedling Apple stocks. With such results I for one do not think Paradise stocks are a gain at all, but the reverse; the trees on the Apple stock cover much more space in a shorter time than those worked on the much-lauded Paradise. Perhaps this experience does not coincide with that of many others, but it is an undoubted fact.—A YORKSHIREMAN.

#### APPLE HISTORY.

THE Apple as a fruit and the Potato as a vegetable give precedence with me over all other their food congeners whatsoever, provided they are of a medium size. The papers on the Apple that have followed each other in these pages have been very interesting reading, and I hope what I am now about to throw off may prove interesting also.

It must be over seventy years ago that the Ladies Mary and Elizabeth Broadhead resided in the Deputy Ranger's Lodge, Holly Grove, Windsor Great Park. My wife's father, Thomas Temple, worked in the garden, and he remained there as gardener under successive Deputy Rangers till General Seymour became Marquis of Hertford. It is necessary that I should mention this, as it becomes dovetailed for my story.

It so happened that the above-mentioned ladies were returning from a journey and had to pass through Woodstock, where they stayed a night at the Bear Inn. One Kempster, a shoemaker, lived at Old Woodstock. He was the raiser of the famous Apple since named the Blenheim Orange Pippin, and he must have been then in about the beginning of his fame as the raiser of so famous an Apple. Let us surmise so, judging as I do by the appearance of the tree when I first saw it in 1847. The last time I did so—long, long after that—I was accompanied by the Rev. William Clarke, the then Curate of Wootton, a brother of our R.H.S. Col. Clarke. Old Woodstock was then a hamlet of Wootton. The Rev. W. Clarke was, like his brother, very fond of horticulture. I remember he took a drawing of the old tree, and I think he sent it to the *Illustrated London News*. A basket maker, Grimmet by name, succeeded to Kempster the shoemaker. Grimmet cared nothing about trees, so not long after the above I made another visit to him for the purpose of purchasing the old tree stock if I could, and to work or get it made into some suitable memento. Alas! he had cut it down and burnt it as being "no good on," and it was in the way of younger Apple trees. I had, fortunately, previously secured some decrepit scions from the old tree and grafted them on to the only stocks that offered, miserable cripples, which grew in a garden handy. Cottages and gasometers now occupy the garden site of the original Kempster Apple. Thus fame passeth away! I have been thus minute in describing the site of the old tree, &c., because there may be someone living in the neighbourhood or at the Woodstocks who can remember between forty or fifty years ago, and to whom this anecdote may hark them back to the Kempster Apple tree.

I will return to the sisters Broadhead, who were so charmed by the appearance of the fruit placed by "mine host" on the table for dessert, that they took an Apple home with them for the purpose of raising some young trees in memoriam. The pips were sown by the sisters in two flower pots. Two germinated, and when grown sufficiently large my wife's father was requested to plant them, one on each side of the broad kitchen garden walk at Holly Grove, where they are now in all probability. At any rate, my father-in-law brought me some scions from each of the trees to Woodstock Rectory; I grafted them, and brought the resulting trees bodily away with me to Sulhamstead, Berks, only two hours' journey from where their relatives were raised. You have seen them here, but then time would not have allowed me to go into particulars as above. I will further beg to submit an opinion that in all probability the Broadhead seedlings from the Blenheim Orange were the first of the ilk ever raised. At any rate, the first raised that can be directly traced, and where in living arboriculture can be traced trees other than mine directly handed down by grafts from the old original?

Now, having given you the details so far, I cannot but feel, as you are the leading fruitists of the day, that you will be interested in the Apples I send, both ocularly and epicureally.

No. 1 is the produce, in a direct descent by graft, from the original tree; No. 2 is Lady Mary Broadhead Seedling; No. 3 Lady Elizabeth Broadhead. Here we gain a departure from the first original feature, also a sharper flavour and a firmer and a longer keeping variety. No. 4 is my Apple that I have named Pay-the-rent. I found an old tree of it here for which I could never find a recognised name. I am propagating it largely for myself, as I consider it to be an excellent household Apple. Pray do not tell me it "lacks size and colour"—these bugbears are leading us like will-o'-the-wisps.—ROBT. FENN.

[We will not say that Pay-the-rent lacks size. It is large enough, very symmetrical, round, green, and somewhat russety, and the fruits

being uniform in size form an excellent sample. This is, no doubt, a serviceable culinary Apple, and as the tree appears as free and healthy in growth as Golden Noble, and about as productive as Dumelow's Seedling, we suspect our correspondent has acted wisely in planting it largely. Lady Mary is a very fine form of the Blenheim, the fruits larger than those from grafts of the original tree. Lady Elizabeth is more conical, smaller—dare we say rather too small—and brisker than either of the others. We will have Pay-the-rent cooked as requested by its discoverer.]



#### NATIONAL CHRYSANTHEMUM SOCIETY.

IF Mr. Dean regards the Floral Committee of the National Chrysanthemum Society as a kingdom of his own creation this may account for his taking any suggestion made as a personal attack, for he is a poor monarch who will not defend his own kingdom.

Mr. Dean says country members receive all they are entitled to have. All they receive is an admission ticket to the Aquarium Show, while representatives of affiliated societies have the privilege of attending and voting at the principal meetings. As a rule these representatives are anything but horticulturists, whereas the members are mostly Chrysanthemum growers. This makes it look a case of countrymen paying the piper, while the Londoners choose the tune; but I do not blame the idol so much as the worshippers.

Under the present construction of the Society, it is very doubtful if any country grower, however good, has the least chance of being elected on the Floral Committee, therefore under the circumstances it is quite useless offering any names for nomination. What is wanted, and must be had, is a Society and a Floral Committee of widely representative growers elected by ballot; for however honest and *bonâ fide* the transactions of the present Committee may be, it is evident they do not satisfy the general body of the Chrysanthemum world out of London, if in it.

Mr. Dean further supports himself with the idea that the central body must be in a position to know more than outsiders. Next autumn I may be in a position to show the fallacy of this notion. The Beauty of Exmouth case is not settled to the satisfaction of hundreds of countrymen.—J. H. GOODACRE.

THE Secretary and Committee of the N.C.S. ought to be pleased that your correspondents are seeking to improve it by placing it on a wider basis, and thus making it more truly "national" in character. We have been told that most of the principal Chrysanthemum growers are on the Committee. Where are such men as Messrs. Molyneux, Parker, Drover, and many others that might be named? The Floral Committee meet in private, the judges work among the public. I think it should be the other way about. I think Mr. Addison's proposed rule a first-rate one, and if it is not adopted we shall want to know the reason.—A COUNTRY MEMBER.

I CANNOT agree with Mr. E. C. Jukes, page 12, that it is entirely the fault of the country members that a preponderance of metropolitan growers and exhibitors are on the Committee. The country delegates may not be so united in their choice as the "metropolitans," but why do not the N.C.S. adopt the same rule that provincial societies have in force—viz., that the Committee shall consist of a fair proportion of trade and private growers, both metropolitan and provincial? This certainly would do away with the charge of "cliqueism," and the Society would be more fully entitled to be called "National." Referring to the Beauty of Exmouth case, I trust Mr. Jukes does not expect me to believe that the Sub-Committee carried out the injunctions of the General Committee by investigating the matter in the manner they did. Had the Sub-Committee been appointed for the purpose of discussing, "How best to shelve the matter," I do not think they could have acted much differently, and why could they not go into this case without fear of libel, the same as they did in the Wells' case? Now, does Mr. Jukes really believe that most of the leading authorities upon Chrysanthemum culture are on the Committees of the N.C.S.? Mr. Jukes is certainly entitled to his opinion, but many will differ from him. I admit that those most interested in the Chrysanthemum trade belong to it. How fond the officials of the N.C.S. are of pointing to the R.H.S. as a model of procedure. I am not questioning the methods of that Society.—HENRY HAVELOCK.

I THANK you for allowing a free and fair discussion in the Journal, I am sure it will do real good to the N.C.S. in the long run. I adopted the only method I could to make the facts known, and I am heartily pleased to see the way the public appreciate your having opened your pages so impartially.—W. WELLS.

MR. GODFREY'S complaint seems to have afforded an excellent opening to all those persons who have real or imaginary grievances against the N.C.S. to distinguish themselves in print, and the discussion that he



opened bids fair to drift into numerous side issues. I quite believe it to be for the advantage of us all that the Editor should offer every facility for a complete discussion of any genuine grievance that may exist; but the query that has arisen in my mind on reading the correspondence is, Are some of the complaints that have been made well founded? The expediency of holding the Society's Shows at the Aquarium is a perennial nuisance. Every year the question crops up either in the Press or at our meetings; the objectors make no alternative proposition, the same reasons are given why we go to that building, and time is wasted in listening to a complaint which for want of more generous patrons we are unable to remedy. There is, in a word, no company or public body in the Metropolis that offers us the same encouragement to hold our Shows as the Aquarium Company does.

If Mr. Goodacre's letter may be taken as a sample there are one or two curious statements in it that seem to demand an answer. He says we need not exclude the Press from our meetings, by which observation his readers might think that the meetings of the Society are held in secret, which is not and never has been the case. At the Floral meetings acknowledged representatives of the gardening Press are by the seventh regulation of that Committee allowed to be present, and it is rare indeed to find one of those meetings where three or four of the regular staff of the gardening papers are not in attendance. Similarly at the General Committee meetings, ever since the formation of the N.C.S., all the gardening papers of any pretension at all have been represented, and with the exception of one or two of the penny papers who do not report horticultural meetings of this kind, they have given accounts of the business done. If there be a case where for a time a paper has been unrepresented, the fault lies certainly not with the Society or its officials. So much for the Press exclusion.

Mr. Goodacre greatly exaggerates when he says an endless number of certificated varieties are consigned to the rubbish heap after a year's trial by the growers. There are many perhaps that have been pushed aside by newer and improved sorts in the course of a few seasons, but the proportion is not greater than could be expected in the law of progress. Certification is a mark of present merit, not a hall-mark for eternity.

As an amateur who has tried the experiment of importing new varieties direct from the raisers, I do not see how we can expect it to be otherwise than that a large number of certificates should be awarded to trade growers. They certainly do not receive more than their share; and if the same firms' names appear more frequently than Mr. Goodacre approves of, let it be borne in mind that the business of importation to any extent worthy of the name, is carried on within the London radius only by about half a dozen firms at the most. There are few provincial nurserymen that can afford to indulge in this costly branch of business, and as their novelties are usually a year behindhand, of course the original importers stand the best chance of being first in the field with any flower that is new and striking. The number of worthless flowers thrown away by the trade far exceeds anything like the number of certificated flowers discarded by other growers.

In the Beauty of Exmouth case it would be interesting and instructive to know how many of our critics would act in defiance of legal advice; and seeing that both parties are willing to substantiate their sides of the question by sworn statements, the Sub-Committee not being judges or a legally constituted jury, but only ordinary business men, have as much right to give credence to the member complained of as to the one complaining. They, however, in point of fact, do neither, but, pointing out the difficulty that has arisen, recommend no further action be taken. Even supposing a member of the Society were guilty of the grossest irregularity, and proved to be so, there is no rule by which his expulsion could be effected. This to my mind would be the only practical solution in a case where indisputable proof of wrongdoing should be brought home to a member. But before resorting to such a course of action something better than word against word, and stronger than oath against oath, would be required; there ought to be a preponderance of evidence on one side or the other, and not an equality. A review of the correspondence suggests many reflections, but I have perhaps occupied sufficient space for the present.—C. HARMAN PAYNE.

I SEE Mr. Godfrey is dissatisfied with the Chrysanthemum people generally. It reminds me of some people when finding fault with the world, and when such is the case it is rather a pity, in my opinion, they ever had anything to do with it, and must be in a disagreeable position.

The discussion respecting the granting of a certificate to the Beauty of Exmouth is reflecting discredit not only on all those who comprise the Committee and have to carry their duty into effect, but also the Society that elected them. If there is one person in the universe more against, and would at once openly denounce anything discreditable or unfair in working for the public good on either of the Floral Committees with which I have the honour of being associated for many years, it is myself. It was I who asked to have the bloom of Florence Davis brought to the table for comparison with that of Mr. Godfrey's. Why did I do this? Simply because, as there always ought to be, a discussion as to the relative merits of the plants and flowers brought before us. Surely there is nothing wrong in this.

I must say I have a dislike to hearing expressions of undecided opinions, especially on committees. I often hear persons say, "I hardly know whether I like that flower or not." I pity their want of discrimination and decision. In this case two committees differed, and that

difference of opinion brought out the facts, and they acted accordingly. No one now has the slightest doubt of the correctness of the discussions. What on earth can anyone wish for different or better than this? Whatever one of the Committeemen did or said in his business capacity never ought to have been mixed or even mentioned in connection with it. All bartering is quite apart from the functions of the Society. As far as I heard and saw, nothing was said beyond what a member of that body had a right to say. There is nothing to call for an inquiry whatever on the part of the Floral Committee of the National Chrysanthemum Society, and I hope none will be made.

I think I have missed but three meetings since its formation, and if any country member can show that he is better qualified, or has the prosperity of the Society more at heart, and acts more openly and correct (I feel I can also include all my colleagues) than myself, I should be glad indeed to see him acting in my place; he would be just the person wanted to silence all cavils, endow the Society with prosperity, and make it not only thoroughly national, but the "World's" Society, with the greatest possible speed.—H. CANNELL, *Swanley*.

#### PRINCESS MAY.

I ENCLOSE a late bloom of Princess May. What do you think of it for a late bloomer? It is not so large as those produced earlier, still not very small for January.—N. MOLYNEUX.

[The bloom referred to is 6 inches in diameter, with long, partially incurved glossy pearly white florets. It is the finest white Chrysanthemum we have seen at this period of the year.]

#### JOHN LAMBERT ONCE MORE.

WERE it not that Mr. Lambert is so wide of the truth in the insinuation contained in his remark, "That where I judge he finds Golden Queen of England substituted for John Lambert," I should not trouble to occupy space in the Journal in such an idle controversy. My wish when writing to the horticultural Press is to benefit the public and not gratify the personal pique of any individual. Mr. Lambert and I judged together at the last Liverpool Show, and he knows perfectly well that as we found the names so we left them. In answer to the question in Mr. Lambert's last paragraph I may say I adapt myself to circumstances. I am content to abide by the ruling of the N.C.S. catalogue or I can depend upon my own judgment, whichever is required.—E. MOLYNEUX.

I WISH to endorse all that Mr. Hopkins said last week in the *Journal of Horticulture* (page 13) in reference to John Lambert. I have grown that variety side by side with Golden Queen for the last two years, and find it unquestionably the better one. Several Chrysanthemum growers of this district are of my opinion, and I think it hardly fair to the raiser that its superiority is not universally recognised.—J. DOWNES, *Berkswell Hall Gardens, Coventry*.

#### SECRETARY FARSON AND MISS MARÉCHAU.

I SEND you a bloom of a Chrysanthemum, Secretary Farson, which, according to Vaughan's description, should be yellow, thus: "large yellow ball with tubular petals, like L. C. Maderia, but larger in size and clearer yellow." It promises to be a grand variety, but I hardly think it can be styled an incurved, if so, it will be a monster. I also send you flowers of Miss Marechaux, the best white incurved variety for Christmas I have yet met with. I have grown it for about eighteen years, and never found its equal. This variety never mildews like the "Tecks," and the plants can be grown very closely together, as it makes small foliage and wiry stems. You will observe the flowers are not fully out yet.—W. WELLS.

[The bloom of Secretary Farson is of great size, but more of a golden bronze than a yellow. The florets incurve, but more experience is needed to determine its classification. The flowers of Miss Marechaux are charmingly fresh and pure. The variety has long been regarded by many growers as one of the best Christmas Chrysanthemums.]

#### NEW CHRYSANTHEMUMS.

THE ably written notes by Mr. Molyneux are undoubtedly very useful to all Chrysanthemum growers, and are looked for year by year with much interest. Notes coming from such an able cultivator should induce other skilful growers to give their experience, as varieties differ according to the situation the grower may be located in. It is my opinion that this would help to do away with the tediousness of perusing the many lists that are now placed before the public. The following is my experience with a few recently introduced varieties:—

*Flora Macdonald*.—The blooms of this have been rather rough this season, and too late to be seen on many boards, yet it is well worth a place in all collections.

*Oeta*.—This was also too late this year. The plants appear to want stopping the first week in May, for the bloom is a long time coming to perfection even after showing colour. Nevertheless it is a very pretty flower, the colour of a bright Mrs. Coleman, the florets incurving very tightly. It is a good front row bloom; the plant is of rather dwarf habit.

*Ami Hoste*.—This was grand with us during the past season. This should almost dislodge Mrs. Shipman, as it is much like it in colour, and being more than twice as large, deep in build, and well formed, it is good for early shows.

*C. B. Whitnall*.—This seems likely to turn out a good thing; colour



soft velvety maroon; bloom of good form, after the build of Jeanne d'Arc. It should displace Prince Alfred, as it is much brighter. A strong grower of medium height.

*Mrs. Clibran.*—This is a Princess of Teck in form, and much like it in colour when first opening. When the bloom is finished it shows a blush shade, while the outer florets are tipped pink, giving a distinct appearance. The plant a vigorous grower, about the same height as Princess of Teck, but fourteen days earlier.

*Noel Praquell.*—This has turned out fairly good; the flower is of excellent form, though the florets are thin in texture, only fit for large collections. Plant dwarf, about 3 feet 6 inches, rather a weak grower.

*Camille Flammarion.*—This and Robert Cannell have both done well with us, the latter especially so. The bud should be fixed early of both these to secure good blooms. R. Cannell lasted fully a month in good condition.—J. PITHERS.

(To be continued.)



#### FRUIT FORCING.

**Vines.**—*Early Houses.*—Exercise great care in ventilating, as sharp northerly and easterly winds, with cold draughts, injure the foliage, causing it to become stunted and crumpled, but judicious ventilation is essential to sturdy growth and well developed foliage. A confined moist atmosphere, on the other hand, causes the growth to become lean and drawn, the leaves thin and poor in texture, therefore liable to be scorched by the sun and fall a prey to red spider. Attend to disbudding and tying down the shoots before they touch the glass, being careful not to displace them from their sockets or cause them to snap by too sharp bending and too tight tying. Stop the bearing shoots one or two joints beyond the fruit where the space is limited, but where there is room for lateral extension do not confine it to any given number of joints beyond the bunch, extending it so that an even spread of foliage fully exposed to light will be insured, yet avoid overcrowding, as that is fatal to satisfactory results. Remove all surplus bunches, and, when they come into flower, maintain a day and night temperature of 70° to 75°, with a decline, however, of 5° through the night, and a rather drier atmosphere.

*Vines in Pots.*—The heat about Vines in pots must not be allowed to decline, but bring the fermenting materials up to the rims, pressing them down, yet not so as to raise the temperature above 70° to 75°. A heap of Oak or Beech leaves and stable litter should be in the reserve ground, to admit of a supply of prepared material being obtained as required. When the Grapes are set thin the berries carefully, supply liquid manure to the roots, and place some turves, grass side downwards, around the rims of the pots, so as to form a dish, the turves extending over the rims and resting on the fermenting material, and fill the dish with decayed manure. This will encourage surface roots, which will extend to the turves over the rims of the pots and into the fermenting bed, and greatly assist the Grapes in swelling.

*Houses to Afford Ripe Grapes in June.*—There must not be any further delay in starting the Vines intended to produce Grapes at the time named. If the roots are partly inside and outside, the latter border must be protected with leaves or litter, so as to prevent the soil being frozen, but this ought to have been attended to in November. Supply the inside borders thoroughly with water in a tepid state, and if the Vines are weak follow with liquid manure—rather thick, but not too strong. Sprinkle the rods twice a day, depressing young rods and canes to a horizontal level or below, so as to insure the buds breaking evenly. Maintain a temperature of 50° to 55° at night and on dull days, advancing to 65° from sun heat, continuing those heats until the buds begin to swell, when gradually raise the night temperature, so as to have it 60° by the time the Vines come into leaf, and to 65° by day artificially.

*Vines from which the Grapes have been Cut.*—The sooner the Vines are pruned now the less danger is there of their bleeding from the wounds when the sap rises. It is a good plan to dress the cuts with styptic or knotting whilst they are dry, so as to close the pores of the wood, as a safeguard against bleeding. Cut to a plump round bud as near the base as possible, two buds being sufficient to leave where the wood is stout and short-jointed, but where the practice has been followed and not proved satisfactory the operator may prune to the best bud on well-ripened wood. This will cause the spurs to become long, and a shoot must be trained from the base to displace each spur after its shoot has borne fruit. Thoroughly cleanse the house, washing the glass with clear water, the woodwork with soap and a brush, limewash the walls, and remove the loose bark from the Vines, avoiding peeling and scraping that may injure the live bark, and wash them with soft soap, 4 ozs. to a gallon of water. Surface-dress the borders, clearing off the loose surface, using fresh loam with a 9-inch potful of steamed bonemeal to a barrowload of loam. Keep the house as cool as possible to secure complete rest. If there are plants in the house only afford fire heat to exclude frost, not exceeding 40° to 45°, by artificial means.

*Late Grapes.*—These are best cut with all the wood that can be spared, and the ends of the shoots placed in bottles of rain water in an

inclining position in a Grape room, dry fruit room, or an empty room from which frost is excluded, but not warm (above 50°) or the Grapes will shrivel. This will admit of the Vines being pruned and the house being cleaned, and is much better than allowing the Grapes to hang on the Vines, pruning having to be deferred until a late period, whereby the latter are liable to suffer through bleeding and want of rest. Maintain a mean temperature of 40° to 45°, with a dry atmosphere in houses where Grapes are hanging, and avoid a close atmosphere when the weather is favourable for ventilation. Examine every bunch frequently and remove all decayed berries.

**Pines.**—*Fruiting Plants and Starters.*—The temperature must now have a mean of 70°, 5° less on cold nights, and 5° more on mild dull days, admitting air at 80° with sun heat, but not lowering the temperature, allowing it to rise to 85°, and closing at 80°. Sprinkle all available surfaces twice a day, but do not syringe the surface of the bed between the plants, and avoid producing dense steam by damping highly heated hot-water pipes. Syringe the plants lightly occasionally early in the afternoon of fine days when the axils of the leaves become dry. Examine the plants twice a week for water, and supply it only to those in need, always in a tepid state, and with a "dash" of guano in it, say 1 lb. Peruvian guano to 20 gallons of water.

*Pines for Successional Fruiting.*—Another batch of Queens should be started early in February to supplement the supply of fruit from those plants which are already introduced for ripening in May and June. Enville is an admirable variety for starting at that time, and affords even-sized handsome fruit with a moderate crown. The plants selected must have a stout base and opening somewhat in the centre of the leaves. Plants that have completed a good growth in the previous summer, and have been kept rather dry and cool for a period of six to eight weeks before starting, are most likely to throw up fruit promptly. Beds that have bottom heat supplied by hot-water pipes can be soon prepared for the reception of the plants. Where, however, the heat is afforded by fermenting materials, the necessary steps must be taken at once to get the requisite beds made, and 85° to 90° of bottom heat secured by the time required. Plants that have been kept somewhat dry preparatory to starting must have the soil properly moistened before the pots are plunged in the bed. Successional stock will be suited with a night temperature of 60° to 65°, 5° less in severe weather, and 5° to 10° more in the daytime, ventilating moderately when the weather is bright and mild, avoiding drying currents.

#### THE KITCHEN GARDEN.

**Forcing Cauliflowers.**—Cauliflowers will not stand hard forcing, but the Early Dwarf Forcing or Snowball can be forwarded considerably, or be had fit for use from the middle of April without much trouble. If a stock of plants are already raised this will be a further gain of a fortnight or more, otherwise seed should be sown thinly in pans or boxes, and placed in gentle heat. Directly the seedlings appear transfer to a shelf near the glass in a warm greenhouse or pit, as they draw up badly in strong heat, also breaking down wholesale if syringed. When well into rough leaf put singly into 3-inch pots, keep rather warmer till rooting afresh, when they ought again to be near the glass in gentle heat, a heated pit answering well. Before they become badly root-bound the plants, whether autumn or winter raised, should be finally planted out in a deep frame or pit, and not less than 15 inches apart each way. Given the benefit of a mild hotbed of leaves and manure, and a foot of rich loamy compost, they will grow strongly, and must be freely ventilated, or otherwise they will become too tall. Being kept well supplied with water and liquid manure it is surprising what beautifully white and serviceable hearts will be produced. A good succession will be had by planting on slight hotbeds with only rough frames and mats by way of protection, these batches, as a rule, hearting in before any grown in handlights.

**Forcing Peas.**—Peas again will not stand much heat, but may be forwarded considerably under glass, and either in long, narrow, deep boxes, pots, or planted out in pits. They are not particularly remunerative, or not nearly as much so as Cauliflowers, though early dishes are always appreciated. Chelsea Gem and William Hurst are suitable for house and frame culture. The earliest gatherings can be had from plants grown along the fronts of newly started vineries and Peach houses, those in frames forming a good succession, and also, as a rule, producing the best crops. Chrysanthemum pots are admirably adapted to Pea culture, and fully fifty of these should constitute a batch. Well drain and three parts fill with good loamy compost, to which a sprinkling of wood ashes has been added. Sow the seed rather thinly, cover with 1 inch of soil, and water if at all dry. Keep them in the light position indicated or on shelves, water sparingly till the plants are growing strongly, then let them never approach dryness at the roots, liquid manure also being needed when they have reached the flowering stage. Thin out the plants early where crowded, and support with Birch or other spray, or sticks and raffia. Make a second sowing a fortnight later on, and also sow several flat boxes with seed of the same variety, with a view to having them in readiness for early planting out in frames or pits.

**Potatoes in Pots.**—These would succeed well under conditions that have been already named as suiting early Peas. The Chrysanthemum pots or any 9-inch or larger in size also suit Potatoes, one strong set going to the size named and three to larger pots. The Old Ashleaf, Early Border, Sharpe's Victor, and Mona's Pride are among the best varieties for pot culture, but if neither of these are available then Veitch's Improved Ashleaf may be substituted. Select strong seed tubers, rub off all side shoots, leaving the central sprout only. The best progress will be made if these seed tubers are set closely together,



sprout end uppermost, in shallow boxes and placed in a Peach house or vinery being forced. The warm moist atmosphere will cause them to grow strongly, and when side roots show at the base of the sprouts the time for potting has arrived. Plant them rather deeply, allowing good room for top-dressings. Also start enough sets at once, and in a similar manner to plant a two or three-light frame or a whole pit, and which should be got ready for them in the meantime.

#### PLANT HOUSES.

**Palms.**—During severe weather, when an excess of fire heat has to be used to maintain the desired temperature, thrips are liable to prove troublesome to these plants. A sharp look out must be kept for these pests, for if allowed to become established they soon injure the foliage, which may look unsightly for years. Once these insects make their appearance, sponge the fronds carefully with a solution of tobacco water in which a little softsoap has been dissolved, say 1 oz. to four gallons. After all have been sponged, fumigate the house once or twice in succession until every trace has been destroyed. Where these plants can be liberally syringed once or twice daily according to the weather, they can, as a rule, be kept free from thrips, but where the syringe cannot be freely used constant care and attention is needed. Do not overwater these plants at their roots, and, on the other hand, be careful not to allow them to become dust dry, or the foliage will soon present a sickly appearance. Maintain a night temperature of 60° where Kentias and other warm kinds are grown.

**Adiantums.**—Plants from which fronds have been gathered, and only small stuff remains, may be cut clean over and started again into growth. If placed in a temperature of 55° to 60° they will soon commence pushing up new fronds, when they should be repotted without delay. If the plants need larger pots remove the drainage and any roots that may be crowded about them; the remainder of the ball can be placed in the new pot without disturbance. If the plants are in pots large enough they may be divided by cutting them straight through the middle; the drainage should be removed and the plants potted without disturbing them further. The soil, which should consist of equal portions of good loam and leaf mould, with the addition of sand, must be pressed firmly into the pots. If the plants have been infested with small slugs thoroughly dust the crowns with soot. This will drive them out, and they can be picked off a short time afterwards. Continue this practice until the plants are perfectly free from these pests. A small white caterpillar-like grub occasionally infests these plants and feeds upon the crowns and young fronds just as they form to such an extent that seldom a perfect frond is allowed to develop. These can only be destroyed by thoroughly shaking away from the plants every particle of soil, when they roll out and can be destroyed. The best means of stamping them out is to burn any infested plants. After potting stand the plants on a moisture-holding base and syringe freely amongst the pots. Very little water will be needed until the plants commence to grow.

**Gloxinias.**—Any plants that are starting into growth where they have been stored away to rest will only draw up weakly if allowed to remain in a semi-dark place. The old soil may be shaken from the roots and the tubers soaked for a short time in tepid water and then left to drain thoroughly. After this they can either be potted singly or placed in boxes amongst leaf mould and sand until they have well started into growth, when they can be potted singly into the pots in which they are intended to flower. Once the plants are started in pots we find they do well on a shelf fairly close to the glass, where the temperature ranges from 55° to 60°.

**Eulalia japonica.**—Plants that died down after use in the conservatory and have since been kept in a cool house may be removed to the forcing house or any structure where gentle warmth is maintained. They will soon commence to push up new growths, when the plants may, if increased stock is needed, be divided into two, three, or more pieces according to their size. These plants are most useful in 5, 6, and 7-inch pots, and grow freely in any rich soil—good loam, sand, and one-seventh of manure will suit them very well. If gentle bottom heat can be given them after division they will soon become established, when cooler treatment will suit them well.

**Begonia weltoniensis.**—This is a useful plant for conservatory decoration, as well as two or three other kinds of a similar nature. The earliest batch may be shortened back and placed into a temperature of 50° until they show signs of growth, when the old soil should be shaken from their roots and the plants repotted in a fresh compost. The plants can be placed in the same size pots or smaller. If the latter, they will soon need repotting. They will be found to succeed well in three-parts of loam to one of leaf mould, with a liberal quantity of sand according to the texture of the loam, and one-seventh of old Mushroom bed refuse. Water with care until the plants are growing freely. They will start well in a vinery if no better position can be found for them.

**Caladium argyrites.**—A good batch of tubers should be started into growth; 2-inch pots are large enough in which to start them, or better still, place them in pans amongst light sandy soil, and after growth has commenced put them in pots. The pans or pots containing the tubers should be plunged amongst cocoa-nut fibre refuse in the propagating frame. Too much water at first often proves detrimental to them.

**Poinsettias.**—As the bracts of these fade place the plants where the temperature ranges about 50°, so that their stems may harden and ripen. Keep them on the dry side, and after a short time they will not require any water.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### THE WEATHER.

WE are still frost-bound. About 2 inches of snow fell on January 3rd and 4th, and on the 5th the thermometer registered 9°. At no time during my lifetime has there been so much frost during October, November, and December as we experienced last year. Several times we have had an unbroken frost of three months' continuance during January, February, and March, but never in the latter months of the year.

#### OBSERVATIONS.

It is very desirable that bee-keepers should pay particular attention to bees from the time they are put up in autumn until they are past danger in spring. The condition they are in at the start, how they are protected, and their state at the end of winter should be carefully noted, also noting the numbers of bees the hives may have lost, or whether the hives are actually stronger at the beginning of March than they were at the beginning of November, as is not unseldom the case. A diary of the state of the weather is similarly desirable, not only to the apiarian, but to the worker in the garden. No two winters are entirely alike, but by collecting data of that nature over a series of years the notes become valuable for reference. If bee-keepers would in due time state how their bees have wintered on the points indicated, the record would be interesting and suggestive. That some bee-keepers have something to learn there can be no doubt. When one person can winter bees (no matter how old they are) without much, if any, loss, while others have many dead bees blocking up the entrances of their hives, necessitating removing them with a "hooked wire," so as to save the remnant of a once strong hive, it is clear that more light is needed—more sound practical knowledge. Advice is often taken from teachers who simply give the best they can, and when a calamity occurs amongst the bees of their pupils take refuge in the proposition that the bees died from old age. In nine cases out of ten this, in my experience, is a mere fallacy, and my advice to the inexperienced is to rely on the most successful workers in the practice of the apiary as the safest guides.

#### WHITE LUPIN FOR BEES.

Some people object to growing this plant owing to its liability to shed its flowers, supposing it to be natural. This is not the case. It is due to insects. The white Lupin, in addition to its beauty, secretes much honey, and exudes it in great quantity from the flower stalk, standing in large clear globules. The bees gather this honey, as also do earwigs, and thus destroy the blooms.

#### ARE BEES A NUISANCE?

I SHALL be greatly obliged if you can answer the following questions:—1, Are bees one of the specified "nuisances" of English law? 2, Has a case ever occurred where neighbours have obtained an injunction from a magistrate or county court judge to compel a man to remove or sell bees located on his own ground owing to them occasionally stinging people during hot weather, or damaging a neighbouring laundry business by soiling the clothes during their cleansing flights in spring and early summer?—F. S.

[Bees are protected by law. A nuisance means an "unlawful act or omission." It is not unlawful to keep bees, but if bees are so irritated as to attack people in the public streets or thoroughfares town or county councils might be compelled to frame local acts to prevent the annoyance. If bees are handled and kept as they should be they will sting no one outside their boundary, and it is to be hoped bee-keepers will so manage their apiaries as to make extreme measures unnecessary. Cases have been tried in America, and even in England, to prove bees a nuisance, but in no instance did the pursuer get a conviction. May not a laundry, in some respects, be a greater nuisance than bees?—A LANARKSHIRE BEE-KEEPER.]

#### THE TITS AND THEIR HABITS.

MR. S. ARNOTT (see page 18) will please observe that it was the blue tit, *Parus cœruleus*, which was accused of taking the fruit buds and killing the bees. I have already alluded to the habit of *Parus major* picking up dead bees and dissecting them. Since the snow came, which now lies about 6 inches deep where not drifted, I have watched the great tits constantly peering around two stocks of bees in straw skeps near a window convenient for close observation, but they have not interfered with the hives by tapping or otherwise. I have suspended a lump of suet for their benefit, and they appreciate it. No bird is easier caught than these. In



trapping bullfinches these birds (*P. major*) are a nuisance by entering the cages. I invariably give them their liberty. A lump of suet is an irresistible bait.—J. HAM.

#### PUNIC BEES AND COLOURED COMBS.

I DID not intend to say anything *re* "C., Northumberland," (page 558) until others had had a say, as I was completely puzzled, not having heard of or seen a case where Punics sealed their combs "yellow." Of course I naturally thought this yellow was due to propolis, but the latter explanation of "C." clearly shows that it was not the cause. I have one theory to account for it, which may or may not be correct, which seems to have escaped our friend "A.L.B.K.," which is this: when bees are working on some kinds of flowers, Sainfoin for instance, all the wax they make is a very deep yellow. I do not know if Punics can make white wax from this source, but every other race seals Sainfoin honey with very golden yellow sealing. Other sources, such as the Dandelion and Black Currants, produce yellow wax; in fact, every honey seems to yield wax of a different colour, which to me is a mystery. Why is this difference in colour? Is it pollen, or what?

Now I know Punics will work on anything that will yield any sweetness, even if neglected by any other bees, and they will also travel a greater distance to collect it, hence it seems to me that the bees simply got their stores from a source neglected by the other bees, either by working on a source neglected by them, or by going a greater distance for it, and the fact that they sealed honey both in supers and body of the hive shows they were not to be despised.

Some time ago I received a query on this very subject from a lady in Northumberland, who intimated that she intended asking it in these pages. Being puzzled, I thought it best to see what the public had to say, as some infer that these bees soil their combs with propolis, which I deny, not having seen or heard of a case, even with hybrids. The bees of "C." are hybrids. What interests me most is the fact that "C." makes it clear that propolis is not the cause of the yellowness of sealings.

I may here say that if "C." or anyone else who have had these bees from me are dissatisfied with them, they have only to apply for their money back. Mr. W. H. Ley of Easton, near Stamford, averaged 140 lbs. of honey from his Punics and 40 lbs. from natives (British) the past season; figures like these tell their own tale. His British bees were from queens of my breeding, while many of his neighbours got no honey at all from their English bees.—A HALLAMSHIRE BEE-KEEPER.



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Books (W. B.).**—Some of the works mentioned are, as you probably know, published at this office. We will send your letter to our correspondent, and he may write to you on the subject. The last work you name would not be of substantial value, and you could employ the somewhat large amount to better advantage.

**Address of Correspondents (M. C.).**—It is hopeless for readers to expect editors to supply the names and addresses of correspondents who do not send them for publication. We have sent your card to the writer to whom you allude in case he may like to communicate with you. That is all we can do in the matter.

**Scale on Vines (R. R.).**—Judging from the dried leaves sent the Vines must be in a deplorable state. You did right in taking off the infested leaves and burning them, also in washing the house and Vines. We should not paint the rods with anything, but dress them with a petroleum emulsion, such as is advised on page 16 last week for destroying American blight on fruit trees, but half the quantities of soft-soap and petroleum there recommended would be safer for the Vines,

and a temperature of 120° would destroy all the scale insects covered. You must be very watchful in spring and prevent anything like such an incrustation as occurred last year. You will master the scale with perseverance. The Vines must have sustained serious injury.

**Prize Medal Essays (E. A. W.).**—The names of gardeners to whom silver medals have been awarded have been published. We repeat them—Mr. T. Garnett, Mr. E. D. Smith, and Mr. G. A. Bishop. We shall shortly announce the names of other medallists for essays now under adjudication.

**Liquid Ammonia from Gasworks (J. E.).**—We presume the liquid ammonia is the "gas liquor" from which sulphate of ammonia is manufactured; if so, it must be used very carefully, and highly diluted with water. For vegetables it may be used at strengths corresponding to the vigour of the plants, about 1 pint to a 3-gallon water-potful of water being quite strong enough when it is used over the foliage, and in some cases it will brown the plants at that ratio, not only because the foliage differs in hardness, but through the variability of the strength of the gas liquor. For pouring between the rows of growing crops it need only be diluted with six times the quantity of water, and is valuable for all the Brassica tribe and Peas, taking care not to apply it to their stems. For fruit trees it should be diluted with ten times the quantity of water, and be applied during the swelling of their crops, preferably in the first half of their swelling, as given late it has a tendency to induce late growths. It will benefit every kind of plant that needs support, only take care to supply it weak, and to pour it clear of their foliage. It, however, requires to be used with care, as an overdose is fatal.

**National Chrysanthemum Society's Catalogue (H. R.).**—As intimated on page 18 last week, we sent your letter to Mr. Richard Dean, the Secretary of the N.C.S., who replies as follows:—"This matter is readily explained. Mr. Richardson wrote for a catalogue and said he had enclosed a postal order for 1s., which was not in his letter. I sent him a supplemental catalogue, and asked him to return 6d. in postage stamps. Then he writes on a post card to say I had made a mistake, that he did send 1s., and that he wanted the larger catalogue. His post card contained no address, and, unfortunately, his previous letter had been destroyed, and I could not refer to that. I now send him the Centenary catalogue, but I have not received a single penny for either. If he enclosed the postal order it must have been abstracted during the transit. I give an official receipt for every sixpence sent for a catalogue. If Mr. Richardson's order had been received my receipt book would have shown a counterfoil to that amount, but there is none." It appears that at the time Mr. Dean wrote the above, instead of his (as alleged) owing you sixpence, you owed him eighteenpence. Whether the amount has been remitted or not, you will admit he has met the case fairly.

**Eucharis Failing (G. S.).**—Your plants are no doubt infested by the bulb mite, or what is so commonly termed the Eucharis mite. To clean the plants and restore them again to health and vigour has baffled the skill of many an expert in plant culture. We, however, advise you to try and clean them. It is unfortunate that you turned the plants out of their pots before you could give them gentle bottom heat to again start them into growth. You must go over the bulbs, and remove all decayed portions carefully. The three outer scales of the bulbs have been removed in some instances. In your case it may be necessary to remove one or more, then wash the bulbs thoroughly in tepid water, but before doing so remove every portion in which these mites can secrete themselves. After washing lay the bulbs in dry sand to harden the outer scales in order that they can bear a stronger solution of insecticide, in which they should be well dipped. Any favourite insecticide will do, and may be used the strength that would destroy aphides (green fly). Eucharis bulbs take a good deal of killing, but the process of cleaning will weaken them, and after they are started again the feeblest of growth only will result. Some cultivators have claimed the eradication of these pests by a free use of lime water, which is well worth trying also in your case. Others by the use of an insecticide that is advertised and sold for the purpose. The soil at first should at any rate consist of good rich loam and sand. For years we have used nothing else for Eucharis.

**Large Tomatoes (E. G. N.).**—The variety Royal Sovereign about which you inquire was exhibited at the Drill Hall on July 26th, 1892, by Mr. R. Gilbert, Burghley Gardens, Stamford, and received an award of merit from the Fruit Committee of the Royal Horticultural Society. It is an American introduction, and we believe catalogued in the United States under the name of Ponderosa. Most probably it is the heaviest fruited variety in cultivation, the six fruits shown by Mr. Gilbert weighing 10½ lbs., and it is possible to grow them still larger. As may reasonably be conjectured, the fruit are very solid, and the flavour is good. All the same, it will never be extensively grown unless prizes are offered for the heaviest Tomatoes, irrespective of form and colour. Royal Sovereign is far too coarse, and the colour, pale red, is also objectionable. The fruit sets freely, and if the flowers with fasciated pistils are pinched off early some moderately large well-formed fruit may be had. For exhibition purposes no variety surpasses a good stock of Perfection. Grow this strongly and sturdily, pinch off the first unshapely flowers as advised in the case of Royal Sovereign, fertilise those reserved, avoid overcropping, feed plants well at the roots, and plenty of perfectly formed richly coloured fruit will be had, or such as will win prizes. If after reading this you still have a desire to grow Royal Sovereign with a view to winning prizes write to Mr. Gilbert for his price list of novelties.





AT no time of the year is the decorating of apartments with plants and cut flowers of so much importance as at the present season, when everything out of doors is dull and colourless, and when it is all the more needful to have rooms as bright and cheerful looking as possible. There is now little difficulty in procuring suitable material. So many plants are adapted for the purpose, and the cultural details are also generally so well understood, that, paradoxical as it may seem, the chief drawback in many cases appears to be in the production of too many things. In most private establishments the glass erections are not so overwhelmingly extensive as to allow one to grow flowers at discretion; consequently, where a long winter season has to be supplied with plants and flowers there is not much (if any) room to spare for the growing of anything which is not strictly useful. Happily the most useful is also the ornamental, so that in growing a few plants extensively one produces much beauty without losing the useful.

Anyone who has a number of living rooms to furnish with flowers will know how they vary in adaptability. Some rooms are so dark and hot that a few days, at the longest, destroy the majority of plants and flowers. Other apartments so well meet the requirements of vegetable life that both plants and flowers last for very long periods without requiring to be changed. There is also a certain elasticity about the plants themselves which cause them to stand for a longer or shorter period, according to the condition they may be in. One point well worth considering is to study the kind of plants suited for certain rooms, and as far as possible to use these alone. Generally a distinction in the kind of plants or flowers employed in different apartments is commendable, inasmuch as it does away with any sameness in the decoration of the house as a whole.

In the details of watering plants it is necessary to exercise judgment. In some cases isolated plants may stand for several days and not require water. In other instances plants will require watering every morning, and where heated pipes run close past any plants it will be found necessary to give water oftener still. Taking the last mentioned case first, the best method is to place the pot in a saucer, ornamental or otherwise, and each morning to fill this saucer with water. For several years past I have made a rule to apply warm water to all plants in apartments. If the soil is dry warm water passes very rapidly through every portion, and there is no danger whatever of over-watering. Tulips and other soft-growing plants become dry much more quickly at this season than later in the year, when less fire heat is needed in rooms; and for the same reason it will be found that the stems of cut flowers just now absorb water out of the vases much more quickly. A good plan is to cut the flowers the day before they are wanted and to stand them in water until the next morning. By this method the stems absorb less water after they have been arranged.

I have seen many ways of arranging flowers, and several methods recommended for the keeping them quite fresh as long as possible. But so far I have found nothing better than pure water. But while that is so it is remarkable that assistants have invariably to be taught to keep the receptacles clean. If the flowers are fresh when cut, the receptacles clean, and the water also clear and pure, no better means of keeping flowers fresh can

be had. An easy way to clean dirty glasses and earthenware vases will be found in the use of a little coarse sand amongst lukewarm water. The sand makes them absolutely clean. I have tried switches, ranges, cloths, and sponges, but not one of these is so good, so simple, and withal so efficient as coarse sand. Another thing worth mentioning with regard to cut flowers is this: flowers cut with long stems, especially if the lower portion of the stem is hard, do not stand good so long as those cut with short stems. Therefore it is a saving method to arrange flowers at this season with as short stems as possible. With Callas this does not matter, but with other flowers the above remark applies.

Having said so much about routine, the plants and flowers to be used have now to be considered. The number of plants suitable for general employment in the everyday embellishment of apartments at this season of the year are not numerous. There are, of course, Palms; Kentias, *Cocos flexuosus*, *Areca Baueri*, *Chamædoreas*, *Rhapis flabelliformis* are the sorts in everyday use, and for special occasions *Latania borbonica*, *Phoenix dactylifera*, *Cocos Weddelliana*, and *Thrinax elegans* are sorts most in demand. Bamboos are also good; Metake and nigra the two sorts I prefer. The latter is quite hardy and may be used along with *Aspidistras* in the very worst position. *Pandanus Veitchi* is very good. It stands well, and makes one of the best vase plants we have. Very pretty also is *Phrynium variegatum*, but this does not stand harsh treatment. However, for special occasions, along with *Crotons* and *Dracenas* with coloured leaves, it is worth attention. The common *Ficus elastica* is of the greatest value. Good plants should be at least 4 or 5 feet in height and in 6-inch pots. The variegated form is equally amenable to the discipline of house furnishing, and it is very much superior. We have in constant use several plants of both of these. Plants of *Asparagus plumosus* raised from seed twelve months previously are capital for grouping; so also is the common Maidenhair Fern, a plant which stands exceedingly well, and one which always pleases. All required for room decoration must have finished growth in a cool airy house without much atmospheric moisture. Treated thus it is wonderful how well and how long the plants remain in good condition even in unsuitable apartments.

Plants in flower include Tulips, which have been in good condition for several weeks past. The scarlet *Duc Van Thol* is by far the best. I have tried several forms, but not one comes up to this for early work. Then Lily of the Valley is indispensable just now. This is quite easy to have in good condition. Of Hyacinths Charles Dickens, Norma, La Tour d'Auvergne, and Homerus should be grown. Cyclamens are very good for house work. Suttons' "Butterfly" (white) is, I think, quite the best I have yet seen for this purpose. Very useful also, though common, are Marguerites. Plants rooted in early summer and kept rather dry during winter flower fairly well, and stand the heat of rooms much better than if they had been grown in a warmer and moist condition. I like Zonal Pelargoniums very much for this purpose. If the plants are changed every week they keep for a long time in good condition. In the way of colour—whether in pink, white, blush, or shades, or red—nothing can be better. Of double varieties F. V. Raspail, Mons. Bruant (soft scarlet), and Hermine (white) are, I think, the best. Of singles there is an endless variety. Constance, Lily, Rev. H. Harris, Sissie, Brilliant, Stanley White, and Henry Jacoby are varieties which we have had in good condition all through the winter. Callas are at all seasons most acceptable; just now they are specially so. They do in any position, and if properly treated the same plants flower throughout the season. Chrysanthemums are now getting over, but this year they have been less difficult to secure than in most years. Miss Mary Anderson, Avalanche, Peter the Great, Guernsey Nugget, Princess Teck we find specially suited for late use.

Orchids are generally employed for parties alone—such sorts, for example, as *Odontoglossum Alexandræ*, *O. Rossi majus*, and



*Lælia anceps*. *Calanthe Veitchi* and *C. vestita* do in rooms as well as any other plant.

Flowers for cutting include a variety of *Chrysanthemums*, such as *Mary Anderson*, *Golden Star*, both singles, *Source d'Or*, *Avalanche*, *Princess Teck*, *Miss Annie Lowe*, *Lady Margaret*, *Massalia*, *Elaine*, *Ethel*, and *Mr. Jones*. Perfectly fresh flowers only should be cut for furnishing vases in room decoration. *Zonal Pelargoniums*, *Lily of the Valley*, *Tulips*, *Roman Hyacinths*, *Bouvardias* red and white, *Chinese Primulas*, *Cyclamens*, *Marguerites*, *Callas*, with *Croton* and *Dracæna* leaves, are among the chief things for cutting at present.

The fashion for table decoration has come round to much simplicity, and that allows for a good deal being effected with the outlay of a very little material. A few dozens of *Chrysanthemums* are sufficient for a very large table. As the blooms are now below the medium size these are best arranged in small glasses or silver vases. A very pretty arrangement is secured with white and pink *Primulas* laid on the cloth, at the same time employing a few good leaves of the same plants. Another method of arrangement may be effectively employed, all the material coming from out of doors. Long sprays of one or other of the fine-leaved *Ivies*, with *Rose heds*, bracken Fern of various shades of brown, the common *Polypody* and berries of the *Strawberry Trees*, combine to furnish a charming arrangement. Where *Orchids* are plentiful a few of these laid on the cloth, in combination with *Croton* shoots of the *angustifolium* type, and *Smilax* produce a very rich effect; plants of *Crotons* should be employed at same time. As a rule the one thing to guard against is the using of too much material. A very few good flowers are much to be preferred to lumpy masses.—B.

## NATIONAL GARDENING SOCIETIES.

THOSE who are interested in the controversy now appearing in these pages regarding the doings of the National *Chrysanthemum* Society have doubtless had other thoughts arise in their minds. This, at least, has been the case with me. The whole question referring to the management of so-called "national" societies is both wide and deep, and affords much food for meditation. A decade or so ago "national" gardening societies could have been counted on the fingers of one hand without difficulty, and therefore they did not give rise to much thought. Now, however, matters are changed. At the present time there are at least eight societies, affecting horticulture in various phases, that sail under "national" colours. Many of those, too, have assumed such gigantic proportions, and influence gardening in a more or less degree, that one might well consider the legitimacy of using the term "national." In some respects it is gratifying to know that national societies have grown so rapidly, inasmuch as it augurs well for the future of horticulture; but the various organisations should not in their days of success forget the original objects they had in view. I say original advisedly, because it seems to me, as it might do to others, that some of the societies are inclined to drift away from the purpose for which they were instituted. In other words, do they fulfil the requirements of all their members, and prove themselves truly "national?"

Obviously this is the view in which many country members regard the National *Chrysanthemum* Society. Here we have a Society that has had an unchecked career, and, if we except the small cloud that recently appeared on the horizon, all connected with it have been satisfied. There are upwards of 700 members on the books, and ninety-four affiliated societies in all parts of the country, so from a numerical point of view none can deny its legitimate right to be termed national. But on considering other matters one cannot be surprised at a little disaffection among country members. These pay their annual subscriptions. What do they get in return? Probably a schedule and a pass to the Exhibitions. They should in addition at least have a voice in the management of the Society. The by-laws and regulations affect hundreds of exhibitors in different parts of the country, and therefore it is only right that they should be considered. I am alive to the difficulty in regard to country members. As has been notified in the *Journal of Horticulture*, and as Mr. E. C. Jukes pointed out at the annual dinner, and since in these pages, country members are cordially welcomed at the meetings. Affiliated societies, moreover, had a right to send representatives to the Committee meetings, and it is entirely their own fault if they do

not enforce this privilege. So far so good; but what about expense and time? A remedy is undoubtedly needed.

Passing on we come to the National Rose Society, which has had a spotless and most successful career. There are, according to the annual report printed in a recent issue, 527 members and thirty-six affiliated societies. In addition to these gratifying facts there is a substantial balance at the bankers. Matters could not, in this respect, be more satisfactory. But here comes the inevitable question, "Is it 'national'?" At the annual general meeting held recently it was hinted that of the 527 members no less than 75 per cent. were southerners. This is astounding. A truly "national" society should have a more equal distribution of members. At the meeting alluded to the Rev. J. H. Pemberton strongly appealed to those present to consider the interests of the northern growers, and so make the Society national, but his proposition was rejected. He is unquestionably on the right track, and may he persist in his good intentions until the "prize" is won. Another item worth recording is, that a gentleman at the annual meeting expressed the opinion that were the National Rose Society to consider the interests of northern growers more there would be as many members in the north as there were now in the south. This should be borne in mind.

Then there is the National Amateur Gardeners' Association—a Society that has made great progress. Like many similar organisations it started in a very humble way only two years ago: but it was planted on good soil, and has flourished accordingly. There are now, I believe, upwards of 400 members on the books, a branch Association at Liverpool, and several affiliated societies, including one in Tasmania. These facts speak well for the Association, and affords ample proof that amateur gardeners when properly organised can form themselves into an influential body. The objects of this Association are to watch the interests of "amateurs," the true definition of which is too frequently misconstrued. That this Institution was needed is exemplified by the rapid progress it has made, and it is gratifying to record that the Executive indirectly approached the Royal Horticultural Society in regard to the correct definition of "amateur" with satisfactory results. Besides those mentioned there are the National *Auricula* Society, the National *Carnation* Society, the National *Dahlia* Society, National *Pink* Society, the National *Tulip* Society, and so far as I know there may be more that attach "National" to their titles—in some cases perhaps indiscriminately.

Now comes the question as to the advisability of making necessary changes to admit of the term "national" being used in its proper sense. There are difficulties in the way, but if persisted in they can be overcome. The various societies desire the support of country members, and in return, I maintain, that the latter, as already said, have a right to assist in the conducting of the affairs of their respective "national" societies. How can this be brought about? Admitting the fact that London is the centre of horticulture, it does not necessarily follow that the "national" societies should be conducted exclusively by members who reside in and near the metropolis. Indeed such a state of affairs is, in my opinion, most undesirable. At the general meeting of the National Rose Society the Rev. A. Foster Melliard made an attempt to avert this difficulty by making a proposition that country members be allowed to vote by proxy. But the metropolitan element proved too strong, and the proposition, admirable in its way, was rejected. The same idea should be persistently brought forward at all meetings of all so-called "national" societies until the country members obtain their rights and are placed on an equal footing with those "near home." Similar views may be advanced in regard to the exhibitions. A national society should endeavour to please the whole of its members, country and otherwise, by holding a "national" not a metropolitan or local exhibition. What would members of the Royal Agricultural Society say if their annual Exhibition was always held in London? If this organisation can migrate, so to speak, with satisfactory results, could not a "national" horticultural society do similarly? At all events this and other matters are worth considering, and the sooner it is done the better.—OBSERVER.

## EDUCATION IN GARDENING.

SILVER MEDAL ESSAY. (Concluded from page 524.)

### BOOKS TO CONSULT.

THE subjects mentioned in this essay as being desirable of attention by the horticultural student necessarily require a supply of books dealing with the knowledge recommended to be acquired. As orthography was the first subject mentioned, it is necessary to indicate the best book to consult where aid is needed. For ordinary reference to correct deficiencies in spelling, "Nuttall's



Standard Dictionary" is one of the best. Useful and practical books on grammar and composition are "Lennie's English Grammar" and "Currie's English Composition." There are many other useful works on these subjects; indeed, it would not be easy to go far wrong whatever work is selected.

Botany is well furnished with exponents who endeavour from various points of view to inculcate the principles of the science to the student. Much elementary information can be gathered from Dr. Hooker's primer on "Botany," or Professor Bentley's similar primer on the same subject; following the mastery of the contents of these by proceeding to the use of Professor Oliver's "Lessons in Elementary Botany," which is recommended by Dr. Hooker himself, who says it goes over the same ground in more detail. A better little book than Professor Geikie's primer on "Geology" could not be recommended as an elementary book on the subject. It is written in an interesting and simple manner, giving a very attractive garb to a science that ought to be more widely known among horticulturists.

A knowledge of elementary chemistry is a valuable aid to a gardener, but it is not within the range of everyone to study it systematically, as being an experimental science it requires scientific apparatus and leisure. Acquaintance, however, can be made with the results gained by those who have studied the science in the interests of agriculture and horticulture and much information derived. Professor Johnston's "Catechism of Agricultural Chemistry," edited by Professor Voelcker, will furnish the student with an interesting epitome of chemistry, or he can consult with much benefit Kane's "Elements of Chemistry." Gill's "Geometry" will teach all that is desirable or necessary for a gardener to know about that art.

As a valuable reference book for ascertaining the correct nomenclature of plants, their genera, species and varieties, there is none to equal Johnson's "Gardeners' Dictionary" as a cheap volume. As an exhaustive work on the same subject, though necessarily rather expensive, Nicholson's "Dictionary of Gardening" stands pre-eminent. Both these works are useful, far beyond the valuable help they give in the correct furnishing of the names of plants. Cassell's "Popular Educator" is also a valuable library in itself, dealing with an exceptionally large variety of subjects, and is consequently a most desirable work to possess. It gives a popular insight into a wide range of useful knowledge, and being handy for reference affords a ready means of consultation.

Plenty of literature is at hand dealing with practical gardening, and every detail of practice connected with it. Every phase of gardening is represented, and on the whole well. The works mentioned previously—namely, Johnson's and Nicholson's Dictionaries—contain abundance of cultural information. Thompson's "Gardener's Assistant" has for many years been a standard book on gardening knowledge, and still remains a most valuable work. The principal organs of plants are treated upon in a plain and useful manner; also the food of plants, and every detail in the management of a fully equipped gardening establishment. Such a book is a great help to obtaining an extensive knowledge of gardening, as in addition to the chapters on cultivation and management of crops in the open and under glass, full instructions are given on the use of every tool and instrument used in gardens. Another work less pretentious in character but yet very useful is "Cassell's Popular Gardening."

The preceding books being more of a general all-round character, there remains to be noticed now a few special works dealing exclusively with some particular subject. The first to be mentioned is a new and modern work entitled "The Fruit Grower's Guide," by John Wright. It is the latest and best work published on fruit growing, and aims at recording and illustrating in a manner never attempted before all the necessary details connected with growing fruit under every possible condition of culture. Prominent mention is made of this work not only for its excellence, but because the impetus given to fruit growing of late years renders it absolutely necessary that every ambitious gardener should make himself as thoroughly informed as possible on a subject that bids fair to take a more decided and important position than it has hitherto done.

As it would be impossible to mention all the works that deal specially with some particular phase of gardening, the following are indicated as desirable works to be in possession of—namely, "The English Flower Garden," by W. Robinson; "The Vegetable Garden," by A. Vilmorin; "Vines and Vine Culture," by A. F. Barron; "The Orchard Growers' Manual," by B. S. Williams. Before concluding this part of the subject it is necessary to point out, to some at least, that in addition to studying gardening with the aid of the most reliable standard works of information, regular attention ought to be given to the careful perusal of the contents of the horticultural Press, which, as a rule, gives a faithful reflex

of the methods of good gardening generally, and interesting records of results obtained. The Press, too, affords a ready means of consultation to perplexed inquirers who desire information for helping them out of any difficulty that may arise.

#### GENERAL ADVANTAGES.

That the general advantages of a wide and intelligent education in the principles of good gardening are manifold everyone will admit, whether they have had the foresight and opportunity or not of securing them. "Knowledge is power," and when combined with practical skill is doubly powerful. But theoretical knowledge alone is capable of conferring much benefit and pleasure upon the possessor. Take botany as an example. What endless vistas of knowledge are opened up by the simple study of the life history of a plant. Detail after detail, full of wonder and interest, crowds upon the observer as he carefully follows the process of development from the tiny seed to the perfect plant. Each process is a revelation, revealing more and more the beauties and wisdom of Nature. An interest in, and an incentive to, further study is



FIG. 7. MR. E. D. SMITH.

created. Armed with this power of seeing, step by step, the gardener feels better equipped for entering upon the more complex fields of thought and study which open up before him. It is the proper understanding of principles which gives the greatest satisfaction, and the more time given to the grasping of these the better will the subject in hand be understood as advancement is made both in theory and practical skill.

It may have seemed out of place to have recommended the perfecting of such simple subjects as spelling and writing, but then the advantages of such knowledge are seen when attempting to master higher things. Many a man is deterred from improving himself, even in the rudiments of his own profession, by the fact that this elementary part of his education is lamentably deficient, and he despairs of improving it, unfortunately seeing no advantage in doing so, consequently drifting into a kind of mental stagnation from which it is difficult to emerge.

The general advantages of pursuing steadily some course of study are not confined solely to the benefits accruing from the attainment of better technical and acquaintance with any particular subject, but also a wider effect is secured—namely, intellectual education, which gives fresh power to the understanding, drills the memory, exercises the observing powers, and generally improves the student almost unconsciously. It becomes much easier for the gardener to work, when he knows at least approximately the science of the operations he is called upon to perform. There is a world of meaning in some of the simplest details of gardening which would be all the better for being thoroughly studied and their purport made clear. There is supreme advantage in possessing as much thorough knowledge as possible, if for no other reason than that of taking away some of



the drudgery from commonplace work, replacing it with vivid interest in its possible results. The advantages of progressive education in gardening as outlined here are numerous. They will only be apparent, however, by steady perseverance in following up each point gained by attempting to conquer others, thus gaining knowledge on wide and liberal lines.

Bacon, the great philosopher, had a sincere regard for the advantages to be reaped from gardening, as he spoke of it as "the purest of human pleasures." He would, no doubt, have a similar regard for the advantages of education in the art of gardening (which in his time were considerably less than now), or he would not have given expression to the following pithy sentence, which it may be helpful to quote on the value of intellectual exercises: "Speaking makes a ready man; reading a full man; and writing an exact man."—E. D. SMITH.

[We deferred the publication of the concluding portion of this very good essay till a portrait of Mr. E. D. Smith could be obtained and prepared for insertion.]



ANGRÆCUM SESQUIPEDALE.

THOUGH known to botanists as long ago as 1822, this Orchid was not introduced to cultivation till some twenty-five or thirty years later. The credit of its introduction is due to the Rev. William Ellis, a distinguished traveller and historian of Madagascar, who, on his return from that island, brought with him living plants which he succeeded in flowering. In general appearance the plant somewhat resembles an *Aerides*, and if treated as such succeeds perfectly well. It attains a height of about 2 feet. The stem is erect, and is densely clothed with the fleshy distichous leaves, which are broad, strap-shaped, recurved, about 1 foot in length, and of a deep green colour. The stout peduncles are axillary, and bear from two to four flowers of great substance 6 inches or more across, pure ivory white and very fragrant. The spur is greenish in colour, about the thickness of a goose quill and of great length. The plant is well figured in the "Botanical Magazine," t. 5113.

Specimens are now flowering in the warm Orchid house at Kew, where the extraordinary appearance of the flowers excite the wonder of all beholders. In the same house are splendid specimens of *A. eburneum* and its variety *virens*, flowering profusely and diffusing a delightful fragrance.

#### HYBRID MASDEVALLIA.

The two best species of *Masdevallia* for garden purposes are undoubtedly *M. towarensis* and *M. Veitchi*. A hybrid between these was exhibited before the Orchid Committee of the Royal Horticultural Society at its last meeting, and was named *M. × McVitieæ*. It seems to possess a character intermediate between the parents. In general appearance it most closely resembles the seed parent *M. towarensis*, but the leaves are not quite so thick. The scape is about 9 inches long and very stout. The flowers are of a delicate rose colour. Though it is difficult to judge of the merits of a plant from a single flower, we believe that this hybrid will prove an acquisition. It was raised in the gardens of W. Thompson, Esq., Walton Grange, Stone, from seeds sown twelve or fourteen years ago, and has now flowered for the first time.—A. B.

### SHOWING AND JUDGING HARDY FLOWERS.

I NEED hardly say that I have followed this discussion with the keenest interest, and hope that some practical action may result. Mr. Shank's proposed wording for schedules on page 547 is, with your suggested amendments, the nearest to what we want of anything yet proposed. Is not a 1-inch tube too small? I do not think 2 inches would be found in practice too large for many things. At our small local show last year a spike of *Eryngium* was exhibited which would not have gone into a 1-inch tube. It was a fine specimen no doubt; but why exclude good specimens of this kind? Nor should I be averse to the inclusion of hardy annuals or even shrubs in some of the larger classes, say for thirty-six and upwards. Do I understand that the formation of a National Hardy Flower Society is contemplated? If so (and unless such is done I fear any model wording of the rules for showing hardy flowers will meet with little acceptance) let it be

clearly understood that it must be a truly "national" one, and, so far as possible, aiding the exhibitions of the Royal Horticultural Society. I am not a Fellow of the latter, but would rather add to its strength than weaken it. But the operations of the Society would require to be extended beyond this, and to include the United Kingdom, aiding say a certain number of selected shows in England, Scotland, and Ireland. Are the promoters prepared to face this?—S. ARNOTT.

THIS is an interesting subject, and one that has caused much trouble where the word herbaceous has been regarded as the important point to study. Judges interpret this word in so many ways. Used as I am to country exhibitions and judges, I find many of the latter are so little versed in hardy plants, good men though they be in other respects, that mistakes do often occur. Being secretary of a society, I found the difficulty described when one class was worded in the usual way of "twelve varieties hardy herbaceous flowers." We now word it thus, "eighteen varieties hardy cut flowers grown out of doors." The result is we get excellent stands of blooms, and seldom have any trouble with the exhibits. It is an advantage, I think, to word it thus, because we get so many flowers otherwise not admissible. For instance, shrubby *Spiræas*, *Philadelphus coronarius*, and *Magnolias* are quite as admissible as herbaceous *Phloxes* and such like. Not only is there a chance to show such worthy hardy flowers as those named, but we get much more variety in our exhibits.—S. P. H.

YES, the name hardy flowers will do; the next thing is, Will it stick? There is a story told of the late Mr. Jay, the noted dissenting minister of Bath. He had been listening with a friend to a sermon, and on leaving the place of worship his friend remarked it was a very powerful sermon. "Yes," said Mr. Jay, "very powerful, but will it stick? because it is not much use if it fails in this; there is no good in pouring water on a duck's back." Just so, and unless we can get the name to stick in the minds of schedule framers we shall still be "as you were." Supposing there be no explanatory note cutting out shrubs and annuals these could be shown, and *vice versa*.

The word "kinds" is more likely to be understood than "varieties," but I confess I think a larger class may be expected where this is not insisted on. At most exhibitions the chief anxiety of the officials is to cover the boards. Nothing looks much worse than 10 or 12 yards of empty boarding even if green-baized. Committees want exhibitors, especially if there be any entry fee attached, and while "varieties" differ so greatly in form and colour they may make a stand as attractive and interesting as if "kinds" had been the rule. Mr. Shanks himself seems rather to lean towards this; at any rate, he rather demurs to the Rev. F. Page Roberts's view (page 520) that "varieties" should not be allowed full points. My idea is rather to judge the stands as to other points first, and if otherwise equal to let "kinds" have the casting vote over "varieties."

Mr. Shanks and I are probably thinking of two classes of exhibitors as regards the tubes. He is fortunate, I fancy, in getting zinc tubes at the price he names on page 547; it might be borne by the generality of exhibitors. My experience leads me rather to suspect that many would sooner not go to even that expense. I arrive at this conclusion from the frequency with which I have been applied to in terms like this, when I have been urging friends to exhibit, "Oh, well! I don't mind showing if you will lend me a stand and tubes," and to this day I am still minus one of these loans, never returned. I, however, had cottagers chiefly in my mind. Such rules as to size would be general, and would touch the cottager seriously. My experience is that it is very difficult to get up any enthusiasm as to exhibiting in some persons, who nevertheless grow flowers most successfully. There are many persons both amongst the better class amateurs and cottagers who want everything done for them. The remarks on this subject already show what diversity of opinion there would be on the size of the tube, "A. D." suggesting 2 inches diameter, whilst Mr. Shanks is content with those 1 inch in diameter. So far as my experience goes these rules are carried out with a certain amount of latitude, and if the tubes, or even the box or stand, is not quite correct as to inches, there is rarely a disqualification on this account; much in the same way as to the times of receiving exhibits and the readiness for the judges.—Y. B. A. Z.

[If making a great "show" is to be the chief object, then the word "varieties," twelve or twenty-four, or whatever the number may be, will tend to that result; but several distinct varieties, say of Pinks or Carnations, may then be included in a stand. If kinds are stipulated for there would be greater diversity, and the displays would be more instructive. It would be perfectly easy if desired to stipulate that, say, two (or more) distinct varieties are admissible



in a stand of twelve bunches, with a proportionately greater number in larger classes. The great desideratum is to have the terms so clear that all exhibitors may know exactly what they must do to be within them. It ought to be as easy to avoid confusion in staging flowers as fruit. Fruit classes are made clear by being based on the word "kinds," with provisos specifying the number of varieties. It is seldom that confusion arises in either staging or judging in these classes, but uncertainty, not to say bewilderment, is much too common, both on the part of exhibitors and adjudicators, in connection with classes devoted to hardy flowers on account of the ambiguity or laxity of the terms employed in schedules. For providing imposing displays the method of allotting space to trade growers for them to occupy in the manner they deem the most effective seldom fails. Under such conditions no doubt the finest collections of hardy cut flowers the world has seen have been displayed at exhibitions in this country. We are not cognisant of any widespread demand for a special society, as alluded to by Mr. Arnott.]

### CANKER ON FRUIT TREES.

I AM much obliged to Mr. Tonks for his lucid article on page 15, and wish to tell him that I intend, on a soil similar to that of which the analysis was given, to try the effect of special applications of potash, lime, phosphoric acid, and sulphate of iron on considerable breadths of ground. I hope to send the result to the *Journal*. In reply to "B. D. K." (page 27), I can say that I have tried for several years the application of neat petroleum (*i.e.*, the ordinary crystal oil) well worked into the cankered places with a paint brush every spring. The wounds have not healed, but seem rather better than when it was first applied. Still it is evidently not a successful remedy by itself. It is, of course, a powerful insecticide, and after a trial of it it is difficult to see how the insect theory can be maintained as a cause of canker, for I cannot conceive of any insects frequenting the places for months after. It was put on in dry weather, and the dry bark would soak it up and hold the oil for a long time. It does not appear to have injured the trees in the slightest, though it has in many cases run down the bark below the wounds.

If the fungus theory be correct, the wash should be a fungicide, not an insecticide, and similar treatment to that recommended by Mr. Abbey for Apple scab, applied at the right time should be sufficient. If the cure of canker depends upon the destruction of every cankered Apple tree in the locality that would furnish a supply of spores, it may be regarded as a hopeless case. My own opinion is that the root of the matter lies in the nutrition of the tree—*i.e.*, at the roots, and that a tree, like a human being, will not take disease if in a thoroughly healthy condition, and that this may be arrived at by supplying all the constituents necessary to keep the tree in health, and I think that this would really be the treatment of "the experienced practitioner," rather than of "the quack." Possibly the removal of poisonous elements may be necessary, but the experience of Mr. Tonks proves that canker is curable, at any rate in his soil, by the application of what the tree needs to build up a healthy growth.

Some sorts of trees appear to have a better constitution than others, or perhaps greater foraging powers, and a greater capacity to appropriate from the soil what is necessary for its existence, when it exists in limited quantity. Stocks probably influence in a similar way, and may account for variations in trees which are grafted with the same variety. On our soil it is not a question of which are the best sorts, but which are the healthiest sorts, then which are the best of these. Cobham for instance—that appears to do so well with many of your correspondents, and which I obtained from two reliable sources—cankers to death here, and I am just grubbing a number of trees which have been planted five years. It is also the same with a great many other sorts. On marking for destruction two trial trees of Gloria Mundi, which have also cankered to death, the Latin proverb, *Sic transit gloria mundi*, appeared most appropriate. Irish Peach is a sort which is very free from canker, but unfortunately grows and crops here very badly, and the fruit produced is almost worthless.

On reading Mr. Abbey's interesting article (page 27), I notice that he has misunderstood the purport of a sentence in my note. The reason I mentioned that Plums do well, while Apples and Pears cankered and Cherries gummed, was not because I was surprised at it, or expected them to be unhealthy, but to furnish the utmost data as to the soil in question; for Mr. Abbey is doubtless aware that, from the healthy growth of certain plants and fruits, the presence of certain soil constituents may be inferred.—WALTER KRUSE.

[We have other letters on this subject, but it will be best to defer their publication till Mr. Abbey's comprehensive notes are inserted.]

### A REVIEW OF SOILS.

MR. KRUSE states: "As the same varieties of Pears and Apples canker on one soil and do not do so on another, it seems a correct deduction that when they canker there is either something injurious in the soil or something lacking which they need." Then follows an analysis of the soil in which Pear and Apple trees canker by the late Dr. Voelcker (*Journal of Horticulture*, December 29th, 1892, page 564). Mr. Kruse proceeds to draw conclusions from the analysis: "It will be noticed that there is a large proportion of oxide of iron, as where there is more

iron (how is this known?) still in the soil in the same locality, Apples canker still more, and as it has been mentioned by some of your correspondents that Apples canker where there is much iron in the soil or subsoil, it would appear that excess of this is the cause of the canker."

I have shown in a previous article that canker is caused by a fungus, *Nectria ditissima*, and it goes without saying that iron will not produce any form of vegetable life, though it may and does form a fitting nidus or soil for the germination of the spores of fungi and the development of the fungal plants, also the perfection of their "fruits." But as there may be cankerous affections without fungal growths we may approach the subject broached by Mr. Kruse without preconception of ideas and conclusions founded on prejudice.

Iron as a cause of canker in Apple and Pear trees. The soil (see analysis on the page above cited) does not contain "a large proportion of oxide of iron," that is 3.38 per cent. as compared with soils that produce the finest Apples. Mr. Kruse, however, does not confine his remarks to the analysis as an Apple soil, but considers it "a good soil for fruit growing," and as Kent is famed for its fruit, subjoined is an analysis of a soil found suitable for fruit production or Hops near Sittingbourne;—

*Organic matter and loss on heating	...	...	5.07
Oxide of iron	...	...	3.63
Alumina	...	...	1.63
Carbonate of lime	...	...	1.48
Sulphate of lime	...	...	0.34
Magnesia	...	...	0.42
Potash	...	...	0.30
Soda	...	...	0.01
Phosphoric acid	...	...	0.10
Insoluble silicates and sand	...	...	84.14
			100.00
*Containing nitrogen	...	...	0.19
Equal to ammonia...	...	...	0.23

—(*Fream's "Elements of Agriculture,"* page 21.)

The "Leeds" soil analysis shows a higher per-centage of essential fruit-food—potash, 0.21, phosphoric acid, 0.14—than the Sittingbourne; also more alumina (2.72), carbonate of lime (2.43), magnesia (0.15), and soda (0.06); but less iron (0.26), sulphate of lime (0.08), insoluble siliceous matter (1.27), organic matter, the store from which ammonia—nitrogen is manufactured (1.43). Mr. Kruse will note the fact that Sittingbourne is the home of the cultivated Cherries in this country, and have a world-wide celebrity, yet they gum there, and Apple and Pear trees canker. Nevertheless, Cherry trees are less subject to gum at Sittingbourne than in many other soils, because they are aided against it by the larger amount of siliceous matter and iron available for the strengthening of their epidermal tissues, whilst these are kept elastic by the free manufacture of ammonia (0.02 more in the Sittingbourne than in the Leeds analysis), = nitrogen (also 0.02 better in the Sittingbourne than the Leeds analysis, a mere matter of equivalents).

If Mr. Kruse's deductions are correct, Apple and Pear trees ought to canker more at Sittingbourne than at Leeds. There is more iron and siliceous matter; in the Leeds soil the iron is sealed up in the alumina, and the two together eat up the ammonia, that is, there is not enough ammonia manufactured to ammoniate the iron and render it available as plant food. Why? 1, The organic matter is low, more "muck" is wanted, twenty-one tons of farmyard manure every third year at least, per acre, or its equivalent in "artificial," which I will allude to later. 2, The Leeds soil is retentive, far more so than the Sittingbourne, by reason of the alumina; therefore, the air and rain cannot enter or pass through such soil and make its constituents as quickly available as in the other soil, which, however, has greater powers of manufacture chemically in the carbonate of lime, but they cannot be exerted because the mechanical nature of the soil prevents it. That is the reason the Sittingbourne soil, chemically poorer, is better for fruit production and Hops than the richer Leeds staple. The carbonate of lime contributes to make the soil mechanically as well as chemically unable to manufacture plant food sufficiently fast for the requirements of the trees, and, though richer in constituents, it is poorer actually as regards output in fruit in the most saleable form than the Sittingbourne, in which the supplies are less but more available.

In the Leeds soil the stores of food are locked up perhaps in a "pan," in that at Sittingbourne there are "no bars" to hinder the trees from abstracting the amount of food essential to their health and fruitfulness, because there is no pan such as must obtain in the Leeds soil from its composition—its calcareous nature. The carbonate of lime must dissolve and descend, and it will form a lime pan somewhere, generally at a moderate depth from the surface, too near in many cases for the long continuance in health of Cherry, Apple, and Pear trees—the former gumming and the latter cankering. The lime and the siliceous matter combine to form a concrete—mortar like, and the iron of the soil is washed into this pan, cakes and forms what is called an iron subsoil, and with the alumina holds ammonia as the smith does iron in a vice, so that it is practically useless to the trees (Cherry, Apple, and Pear), and the iron corrodes their roots and the tops canker. Plums succeed—no gum. The soil suits that fruit—the iron in a pan is held there to its especial benefit. Green Gage requires 6.04 per cent. in the whole fruit, and 7.45 per cent. in its skin, but the Cherry only needs 3.74 per



cent., and the Apple 2.65 per cent., whilst the Pear is content with 1.96 per cent. of iron in its fruit.

We, therefore, understand why and how a rusty sword (Leeds soil) will only grow Plums, Gooseberries, Black and Red Currants profitably, and the Sittingbourne soil—the bright, sharp, tempered iron—produce Apples, Cherries, Currants, Gooseberries, Pears, and Plums with Hops into the bargain. Plums, Gooseberries, and Currants are shallow rooters, therefore they will thrive on calcareous, aluminous, iron soil, where the pan is only at a moderate depth from the surface; also better than Apples, Cherries, and Pears where there is a plough pan, or there is lesser depth of ameliorated soil. Consequently Mr. Kruse must look to the mechanical condition of the soil as well as to its chemical constituents.

I would observe further that the best Apple soils of this country are “red”—due to the presence of a considerable amount or percentage of oxide of iron. The old red sandstone soils are the best for the production of heavy rich fruit, Apples making the best cider and Pears giving the finest perry, as in Herefordshire and elsewhere. (See a geological map of Great Britain). Red soils that have resulted from the commingling of old red sandstones and marls, carboniferous shales, and limestone, fragments of igneous rocks, and glacial detritus, as in the central valley of Scotland, are Apple soils. The red soils of the new red sandstone and so by reason of the iron they contain, and being friable and incumbent on a marly sandstone, produce healthy Apple trees and abundant crops. This is seen on the trias in Devonshire, Somersetshire, Gloucestershire, Worcestershire, and Warwickshire; in Staffordshire, Cheshire, Lancashire, in the Trent Valley in Nottinghamshire, with a strip only in Yorkshire, and patch in the Tees Valley.

Apples are addicted to these red soils, Devon and Gloucester cider rivals that of Hereford. Irony Sussex soils grow more solid and richer Apples than less ferrous Kent, and make cider of superior quality; even the Hastings sands give Apples more colour than the richer soil of the Medway Valley imparts. The vales of Berkeley, Evesham, and Gloucester are a rich brown soil of the lias formation, and are renowned for Apples, fruit, and cheese, the middle lias marlstone (a mixture of clay and sand with a considerable quantity of limestone) provides the rich soil that Apple trees thrive in in Somerset. Those are irony soils, so is Rutland (red land), famous for its healthy trees. Sussex, the iron land of the south, may be poisoned with iron silicates, barren where there is only a few inches of soil over an impenetrable pan, or where a siliceous soil is mingled with iron nodules grow Heath and Fir, but where the lower greensand fringes the Weald clay on the north, west, and south, and is calcareous and dry, it forms one of the most fertile soils—the series known as the Hythe beds—and will grow anything, fruit and Hops. The large, bright, matchless Kent Apples are due to Kentish rag (beds of limestone), “hassock” (soft sandstone), and an admixture of brick-earth—Nature’s blending, not too much nor too little iron, but the nearer 4 per cent. than under 3.50 per cent. the brighter, heavier, and richer the Apples, always provided the drainage is thorough and the soil a good depth. Cherries grow free from gum in the Woburn sands, and send their roots down no one knows where; but in the extraordinary productive vegetable farms of Sandy (Bedfordshire) Apple trees are “eaten up” by canker.

Alluvium and drift are heterogeneous accumulations of mineral matter—a little of almost every substance, and good or bad according to those components, the depth of the ameliorated soil, its staple and the subsoil, with freedom from stagnant water. Alluvial soils—the “haughs” of Northumberland, banks or lands near the Ouse, Derwent, Trent, and Humber, draining the great Vale of York and Trent valley; the Thames, Avon (Bristol), Wye (Monmouth), Usk and Severn valleys—are irony, good Apple soils above the line of floods, and free from stagnant water. At Tadcaster, on the river Wharfe, above or below that place are some orchards on alluvial or warp soil, sandy or deep, that produce better Apples than good loam on magnesian limestone because more irony, and that iron ammoniated through the greater amount of organic matter manufacturing ammonia. The alluvial deposits of the Derwent near Malton, resting on kimmeridge clay, the subsoil clay, but not waterlogged, produce abundant crop of Apples—Keswick Codlin, Ecklinville Seedling, Adam’s Pearmain, Large Cockpit, Ribston Pippin (where the soil is well drained), Baumann’s Red Reinette, Golden Reinette, and Golden Russet. Alluvial soils are rich in iron and organic matter, but very poor in lime, yet they seem to get some—that is, in the case just mentioned by the Ouse from the oolitic and chalk hill; and warp lands receive enough in the water to make the grass “jump,” and lands not actually flooded may in flood time obtain the lime that causes the Apple trees grown thereon to produce 40 pecks per specimen in full bearing.—G. ABBEY.

(To be continued.)

### ANGIOPTERIS EVECTA.

To those about erecting a fernery where roof room is no object this handsome greenhouse Fern forms one of the noblest one could possibly find, and I know of no Fern which produces such a tropical appearance. To see it grown in tubs is no criterion of the proportions it assumes when planted out, as the fronds in the first case are stunted and often of a sickly green colour, whilst in the latter they will with proper attention reach a length of from 16 to 20 feet and carry a deep green colour.

To anyone not acquainted with it I would advise planting in a mixture of good lumpy loam and peat, adding coarse sand and broken sandstone, and in close proximity to a pond, where the roots will soon

find their way and simply revel in the position assigned to them. Another important point is that wherever it is planted the rockwork should be built in such a position as to allow copious supplies of water to be given to those roots which do not reach the pond. If this is borne in mind and the Fern receives frequent syringings there is little fear of thrips—the only enemy to which this Fern is subject—making their appearance.

Anyone having plants languishing in a sickly condition in tubs would greatly enhance their beauty by planting them in the rockery, where with moderate roof room they will steadily improve, for it takes many years for it to get thoroughly established and assume such gigantic proportions as I have mentioned.—R. P. R.



MADAME FALCOT.

I QUITE agree with “J. C.’s” remarks (page 554) as to the great beauty and usefulness of this charming variety. It was quite an oversight on my part not to have included it in my list; but among so many good things it is not always easy to remember all the “gems” at one time. Madame Falcot is one of those delightful Roses which seem to awaken instinctive admiration on account of the soft yellow colour of its finely formed buds.—H. DUNKIN.

### COMMENTS.

I HAVE read “W. R. Raillem’s” letter in the Journal of 5th January (page 5) with deep interest, and will venture to make a few remarks upon it. Having been unable to attend the annual general meeting of the N.R.S. I cannot comment on it much, nor do I think it necessary for such a novice as myself (as compared to “W. R. R.”) to do so. I only hope his remarks will be a warning to us all whenever provincial shows of the N.R.S. are held in our localities. The next provincial will be in my own district, and I hope there will be plenty of room for all exhibits including “W. R. R.’s.” We shall be sorry to see or hear of such an enthusiastic rosarian as he is “dropping out” on the plea of “old age” or single-handedness. I am pleased to read “that the financial statement of the N.R.S. showed a balance on the right side at any rate, although perhaps not a very large one.” Let us hope to see that balance considerably increased and in a “flourishing condition” when the number of northern exhibitors and those from “late land” increase to such an extent that they will compose a good 50 per cent. of the members of the N.R.S. “W. R. R.’s” suggestion about punctuality in paying subscriptions is a very good one, and if such a course could be adopted by members of many societies it would be a great saving of labour to treasurers and others who are good enough to undertake the unenviable duty of collecting subscriptions.

Let us hope to see a provincial exhibition in East Anglia before many seasons have passed by, and a financial statement there very flourishing. We who live in the more northern and midland counties know what agricultural depression is, and although we cannot afford to contribute our mites indiscreetly, at the same time we shall give the provincial Show a welcome, and do our little best to make it a success, trusting we shall have all possible support and assistance from Rose exhibitors and others, and then we shall only need that most important factor, fine weather, to enable us to realise our hoped for result. I am sure “W. R. R.” will agree that we want more Rose growers from the midland and north to take an interest in and belong to our National Society, but to enable us to enlist many enthusiastic exhibiting members we must have provincial shows held in our midst from time to time, and this is not all. The N.R.S. would do well to hold the metropolitan Exhibition upon some date suitable, as far as possible, to all Rose districts and growers of all families of Roses. It will never be a truly popular and united National Society so long as the greatest exhibition is held for the benefit of any one district, be it north or south, or any one family of Roses, though it is very difficult to fix upon such a date owing to the variable seasons we experience from year to year.

I was strongly in favour of the resolution proposed by Mr. Pemberton at the general meeting above mentioned (I refer to the resolution, “That the metropolitan Exhibition be held on the Saturday nearest 6th July”), not because I thought “my Roses would be at anything like their best” on that date in an average season, for I fear that would only be the case once in every six or seven years, and my maidens would not be in bloom even then. I may be wrong, but I do not think Roses, H.P.’s, at any rate, in the south, and on early land, would be much, if at all, past their prime six seasons out of seven on July 6th. Small growers ought to have all due consideration, and no doubt there are many of them amongst members of the N.R.S.; many, perhaps, who only grow cut-backs, too, and who have not the maiden plants that others have to prolong the time of blooming with. All classes of exhibiting members deserve consideration, large growers included, for they cannot grow plants by the thousand and produce first-rate blooms without a good deal of expense in cultivating and exhibiting the Rose. Northern growers, and growers on late land, also deserve a share of consideration, for it is evident that they cannot exhibit from their gardens with any



hopes of success, even if they can exhibit at all, in their respective divisions—i.e., according to the number of plants of exhibition varieties they grow, until enough plants are producing something like a representative number of flowers in proportion to the number of plants grown.

My personal experience is that we, even, who live thus far north have several disadvantages (as compared with growers nearer Sydenham) to contend with. Firstly, as members; secondly, as growers and exhibitors. As members we have to sacrifice more time and money to enable us to attend a general meeting of the N.R.S., and so on. As growers and exhibitors we have probably more severe winters and (perhaps what is more important) more severe springs, for a severe spring with cold cutting winds will often ruin our first crop of Roses. We also, as exhibitors, have a longer distance to go to Sydenham, whether we have Roses to exhibit, or whether, owing to the earliness of the metropolitan fixture, we being unable to exhibit, wish to see the exhibits of "growers in the south and on early land," or, as a working man has expressed himself, "growers nearer the sun."

I must now conclude, hoping at some future time to see northern-exhibiting growers forming at least 50 per cent. of the number of members of the N.R.S.; but in the meanwhile they must trust somewhat to the generosity and foresight of the majority for a solution of one or two problems, which if solved impartially and unselfishly will, I am sure, be forwarding the future interests of the Society, by gaining for it more northern support and more enthusiastic northern-exhibiting members. A National Rose Society deserves the support of the whole nation, and I am sure it needs it to make it a prosperous and united Society; therefore let us all be enthusiastic, generous, and united in our endeavours to support a Society which encourages the cultivation of our national flower.—HENRY V. MACHIN, *Gateford Hill, Worksop.*



**THE WEATHER IN LONDON.**—Several changes in the weather have taken place since last week. Sunday opened dry, frosty, and very cold, with occasional slight falls of snow during the day. A severe frost occurred at night, and on Monday morning a little more snow fell, but eventually it rained. Tuesday was frosty in the morning, but snow fell before mid-day and continued until night. Wednesday opened wet, and at the time of going to press it is raining.

**— WEATHER IN THE NORTH.**—The past week has been generally bright and cold and frosty throughout; 15° frost on the morning of the 12th. On the morning of Saturday a slight shower of snow fell. During the evening of Sunday a thaw set in, but it seems as if again setting towards frost.—B. D., *S. Perthshire.*

**— THE GARDENERS' ORPHAN FUND.**—The annual general meeting of the subscribers to this Fund will be held at the Cannon Street Hotel on Friday, February 3rd for the purpose of receiving the report of the Committee and accounts of the Fund for 1892, electing officers for the ensuing year, and for the election of eight children to the benefits of the Fund. The chair will be taken at two o'clock precisely, and the ballot will close at four o'clock. The voting papers have all been issued. Any subscriber not having received one is requested to intimate the same to Mr. A. F. Barron, Hon. Secretary, Royal Horticultural Society's Gardens, Chiswick.

**— VEITCH MEMORIAL PRIZES AND MEDALS FOR 1893.**—A meeting of the Veitch Memorial Trustees was held on January 17th, Dr. Hogg in the chair. It was decided to offer the following prizes and medals in 1893. Royal Horticultural Society, Temple Show, a medal for the best six hardwooded plants in flower. Manchester, medals for the best hybrid Orchid in flower in commerce and for the best hybrid Orchid in flower not in commerce. Ghent International Exhibition, medal for the best hybrid in the Show. Clay Cross Show, one prize and one medal, subject not determined. Royal Horticultural Society's Fruit Show, Agricultural Hall, one medal and one prize. A prize of £5 is attached to each medal.

**— OUTDOOR MUSHROOMS IN THE NORTH.**—A Yorkshire correspondent writes:—We are doing well with Mushrooms on open-air ridges. During the past few weeks I have gathered over 700 lbs., although we have had three weeks of very severe frost. We gathered over half a cwt. this afternoon (January 11th), which proves that the advice given in "Mushrooms for the Million" is not very wrong.

**— ROYAL HORTICULTURAL SOCIETY.**—According to the terms of the Charter one-fifth of the members of the Council retire yearly. This year the names of members vacating are Baron Schröder, Rev. W. Wilks, and Mr. Sherwood. The names of Fellows recommended by the Council to fill the vacancies are Sir John Llewellyn, Bart., the Hon. Walter Rothschild, and Mr. J. T. Bennett-Poë. The officers that will be recommended by the Council to the Fellows at the annual meeting on February 14th are Sir Trevor Lawrence, Bart., M.P., as President; Mr. Philip Crowley, F.L.S., Treasurer; Rev. W. Wilks, M.A., Secretary; and Messrs. Harry Turner, Henry Williams, and A. H. Pearson, Auditors. Mr. Wilks, who has worked laboriously for the Society during the past five years gratuitously, asked to retire in order that he could accept an advantageous offer which he did not feel justified in refusing. As the Council have the power to make the Secretaryship a salaried office, Mr. Wilks has consented to decline the offer above referred to, and to continue to serve the Society as its Secretary. His vacation from the Council is in accordance with the terms of the Charter, as no salaried official is eligible for a seat. We venture to think, as we sincerely hope, that Mr. Wilks will be unanimously elected to the important position for which he is recommended, as a more zealous, active, and able official it would be difficult to conceive.

**— THE POTATO DISEASE.**—According to Dr. J. Böhm, the statement that *Phytophthora infestans*, the fungus which causes the Potato disease, hibernates in the tubers, is incorrect, nothing whatever being known about its mode of hibernation. He further states that the infection of the Potatoes never takes place in the soil through the uninjured skin, but is always brought about through injury to the tubers by insects or snails.

**— POISONOUS EFFECTS OF THE NECTAR OF THE JUDAS TREE.**—An American divine, who shall for the present be nameless, in a book of illustrations drawn from Nature (or presumed to be) states that the nectar of the Judas Tree (*Cercis siliquastrum*) is fatal to most insects, but yet they persist in imbibing it, so that during the time of flowering, bees, flies, and various species may be seen lying round a tree by scores. Perhaps some gardener who has this tree under observation can tell me whether the statement has any foundation in fact.—J. R. S. CLIFFORD.

**— MANURE AND TEMPERATURE.**—For a number of years I have been trying experiments with chemical manures, and have had both success and failures with the same manures on the same kinds of plants all grown in the same kind of soil. Plants growing in a low temperature bear no comparison with those that have more heat. These latter are wholly satisfactory, the others somewhat disappointing. The query is, Do plants grown in the open require more nitrates or other ingredients to bring them to a proportionate perfection with those grown under glass? It is quite evident that heat favours the growth of artificial manure-fed plants more than those in a colder soil or atmosphere.—T. N. B.

**— TULIPS IN POTS.**—Few things are more useful and showy for decorative purposes during the present and two succeeding months than these easily managed bulbs. They bear sharp forcing wonderfully well if properly prepared for the ordeal by allowing them to make fully an inch of growth above the soil before they are removed from the plunging material. Many bulbs are annually spoilt by not paying due attention to this important detail. Unless root action is well advanced before the bulbs are placed into heat, stunted growth and small flowers are the result. We have 5-inch pots containing five bulbs each, which have been used for room decoration during the last sixteen days. Few flowering plants at this season will keep fresh under similar conditions for so long a time.—H. D.

**— BIRDS.**—Although I mention at times the destructive nature of some birds (wish I could free the blue tits from the list), it does not follow that I kill them, or what I think worse, trap them to live a miserable and brief life after. On the contrary, I have hitherto protected them, and have had experience of some remarkable incidents and anecdotes with birds, as well as other animals, worth recording. One I took a great interest in was a robin, which followed me throughout the garden, and came to me when I called on it. I knew its chirp when hungry, and a worm or two satisfied it. Then I would shake the bushes for it to pick up the various insects, and at this it never seemed satisfied. At dusk, if it did not come of its own accord, I called it to sing me its evening song. It came, sat on a branch close to me, and poured out its lays for about ten minutes, then would disappear for the night.—W. T., *Blantyre.*



— **ELTHAM ROSE AND HORTICULTURAL SHOW.**—We are requested to announce that the date of the above Show is fixed for June 29th.

— **A WHITE ANTHURIUM.**—Says an American contemporary:—"A white variety of Anthurium Andreanum has originated with a Belgian amateur; it has received the somewhat unwieldy title of A. Andreanum Wambekeanum. The plant preserves all the characteristics of the ordinary form, excepting the colour of the spathe."

— **DEATH OF MRS. AYRES.**—We are requested to announce the death of Mrs. Ayres, widow of the late Mr. William Port Ayres, who died in 1875. Mrs. Ayres, we are told, was "every inch a gardener," and was accustomed to write articles for the gardening press when her husband was ill. Mrs. Ayres died at Acton, aged seventy-five, and was interred there last week.

— **MR. W. K. WOODCOCK.**—After a series of very successful lectures in Norfolk Mr. Woodcock has been appointed Horticultural Instructor by the Norfolk County Council, and after this season will be fully employed in East Anglia. Mr. Woodcock is a sound and effective teacher both on the platform and the land. His business at Syston will be continued as usual.

— **TORQUAY DISTRICT GARDENERS' ASSOCIATION.**—The first annual dinner of the above was held at the Exeter Hotel, Torquay, on Wednesday, January 11th. Over seventy members attended. Mr. W. Ainslie occupied the chair, and Mr. W. B. Smale was Vice-Chairman. The Society was stated to be in a financially good condition, and increasing in membership. A reference library will shortly be formed, valuable works (including two bound volumes of the *Journal of Horticulture*) having been promised by the President (Mr. W. Lavers), Mr. Ainslie, and others.

— **WINTER TOMATOES.**—Last autumn the Fruit Committee of the Royal Horticultural Society gave a certificate of merit to a Tomato as a winter cropper, although when exhibited several times last winter it was not thought good enough. How the Committee came to its final conclusion I do not know, but as one much interested in the getting of winter Tomatoes I should like to ask that samples of fruit of this or indeed of any other presumably winter variety should be shown at some of the remaining winter meetings at the Drill Hall. We should be all delighted to meet with a Tomato that would give us such fruits in winter and as freely as Conference, Ham Green Favourite, or Challenger does in the summer and autumn.—**TOMATO.**

— **GESNERA BLOOMS FALLING.**—Will some reader of the *Journal of Horticulture* kindly advise me as to the growth of Gesneras? For fourteen or fifteen years I have grown these plants successfully, but this year, although I have given them the same treatment and the plants are very strong and healthy, and have thrown up some good spikes, every bloom falls off just when about to open. I have them 2 feet through in 7-inch pots, with two parts loam, one of peat, one of leaf mould, and a little silver sand. Some of the plants are near the glass and others are not; some are in the warmer part of the stove and others in the cool position. I have tried keeping them rather dry, and also a little moist, but with the same result, every bloom drops off. The following are the varieties I possess:—cinnabarina, cxoniensis, refulgens, splendens, and zebrina.—**J. D.**

— **IMPORTED AZALEAS.**—I was very much interested in Mr. J. B. Riding's timely remarks on this subject in the *Journal*, December 29th (page 569). It is a fact that many gardeners are prejudiced against imported Azalea indica. For my part I prefer them to many home-grown plants I have seen; they are a better shape, and better furnished with flower buds. As Mr. Riding refers to the plants as they are imported, perhaps you will allow me space for a few remarks on plants that are purchased in pots. I have known many instances where the pots have not been properly drained, one crock only being placed in the bottom. It is needless to say that this is far from being sufficient. The compost also has not been rammed around the ball, so that there were hollow spaces between the ball and the sides of the pot. Plants potted in such a careless manner cannot be expected to thrive. Purchasers would do well to examine their plants as soon as they receive them, and if needful repot, provided the flower buds are not too far advanced; if so defer the operation until the plants have done flowering. Another great mistake is keeping the plants in too warm a temperature before they get established in the pots.—**C. RUSSELL.**

— **WEALTHY APPLE.**—A correspondent ("F. H.") asks if any of our readers can give him the name of the raiser of the above Apple.

— **GARDENING APPOINTMENT.**—Mr. D. Brough, late gardener to Lord St. Oswald, at Nostell Priory, Yorkshire, has been appointed gardener to Sir Archibald Edmondstone, Bart, Duntreath Castle, Strathblane, Stirlingshire.

— **SHROPSHIRE HORTICULTURAL SOCIETY.**—We are informed that the enterprising officials of this very successful Society have just purchased for £3150 some fields adjacent to the show ground, and hope eventually to continue the promenade to the same, and plant trees and other things.

— **HORTICULTURAL INSTRUCTION.**—Mr. G. Garner, Amberwood, Christchurch, Hants, has been appointed by the Poole Technical Instruction Committee to deliver a course of lectures on horticulture. The first was given at Parkstone on January 10th on the Chrysanthemum, and was most instructive.—**K.**

— **HORTICULTURAL SCHOLARSHIPS.**—Horticultural scholarships are now becoming numerous. In addition to those offered by the Worshipful Company of Gardeners and by Sir Trevor Lawrence, Bart., President of the Royal Horticultural Society, we are informed that Baron Schröder has instituted a similar scholarship of £26 annual value for two years.

— **THE LATE SIR JAMES WM. MACKEY'S BUSINESS.**—We are requested to state that the family of the late Sir James Wm. Mackey of Dublin, in accordance with his desire, will continue the seed business, founded in 1777, under the management of Mr. A. O. Watkins, who so ably managed for Sir James Wm. Mackey during his illness for the past two years.

— **ANCIENT SOCIETY OF YORK FLORISTS.**—The annual meeting of the Ancient Society of York Florists was held last week at York. Mr. R. McIntosh presided, and there was a very good attendance of members. Mr. J. Lazenby, the Secretary, read the annual report, which stated that the financial position of the Society was still satisfactory. The subscribing members this year reached 531, which was the highest number yet attained, and an increase on last year of forty-five, and more than thirty names had been submitted since the books were made up. The gross income was £627, and the expenditure £450 10s. 1d., the balance credit being £176 10s.

— **INCORRECT ADDRESS.**—Mr. A. Dean writes from Richmond Road, Kingston-on-Thames: "Kindly permit me to ask you to mention that the publication in the list of members of the Fruit Committee in your columns, copied, of course, from the official list, of my address at Bedfont, Feltham, is incorrect, as I have been residing here for the past eighteen months; and so well is that fact known at 117, Victoria Street, that whilst the error remains uncorrected, yet all their communications are addressed to me here. It is presumably a piece of official oddity." [The address was taken from the list supplied by the Royal Horticultural Society.]

— **THE TITS AND THEIR HABITS.**—I did not speak of the smaller tit in my note on this subject (page 18), as I had nothing but negative evidence to offer, and fancied there was enough of this already. I have never heard of nor seen this bird killing bees in this locality, nor have I seen it destroying fruit buds in my garden. I am making inquiry as to its habits in other gardens, and may return to the subject again. Mr. Hiam, in his interesting note (page 39), appears to have forgotten that the propensities of the large tit have been discussed as well as those of the small one. On page 547 of last volume he himself speaks of *Parus major* and says, *inter alia*, "*Parus major*, commonly known locally as 'Tom Collier,' is also particularly fond of bees, but I have never been able to discover one killing my bees." "A Lanarkshire Bee-keeper" also described *P. major* as killing his bees, and I see Mr. Hiam alludes to his statement that the birds tapped on the hive. I, therefore, think that my short note on the large tit killing my bees was not outside the limits of the discussion. Since I saw Mr. Hiam's last note I have seen the large tit pecking vigorously at a piece of suet, placed for the benefit of the birds this severe weather. I cannot refrain from expressing the conviction that most birds, while doing a certain amount of damage in gardens, are beneficial in many other ways. Even the blackbird, with all his propensities for levying toll from the Peas and Gooseberries, does some service here by killing great numbers of the large grey snail—*Helix aspersa*—which is very numerous here.—**S. ARNOTT, Dumfries.**



— RAINFALL IN SHROPSHIRE.—Mr. C. A. Pearce, Oteley Gardens, Ellesmere, Salop, sends us a tabulated account of the rainfall there in 1892. "We note that 27.48 inches of rain fell on 193 days. Mr. Pearce remarks that although there has been three days more than in 1891, the rainfall has been 6.16 (or something like 750 tons) less per acre. The total weight of rain for the year at a rough calculation is something over 2780 tons per acre. We have experienced a very late, sunless, cold season, which invariably means insipid, flavourless fruit, light crops, light corn, and poor washy herbage."

— A DELAY OF EXHIBITOR'S PRODUCE.—A case of some importance to exhibitors was settled in the Leicester County Court last week, when George William Hunt, gardener, South Knighton Road, Leicester, sued the Midland Railway Company for £25 for delay in the delivery of some vegetables at a Crystal Palace show last year. The case being stated, the Judge pointed out that in awarding any damages they must consider how much money had been really lost in not being able to exhibit and secure the customary prizes, the jury gave a verdict for the plaintiff with £10 10s. damages with costs.

— LECTURES IN HORTICULTURE.—Mr. T. Emmott desires us to state that under the direction of the East Riding County Council twelve lectures are being given in Howden by Dr. James Clarke, M.A., of the Yorkshire College, Leeds. On Monday last, at the introductory lecture, 110 persons were present, and the lecture was listened to with great attention. Dr. Clarke is an able teacher and avoids the use of technical terms except when it is impossible to do so. He makes great use of the blackboard to illustrate what he says. Howden is a noted gardening district, and possesses a very good local horticultural show.

— THE POOR PRINTER.—Thus does a correspondent introduce the announcement of a discovery. Only a lady would be so observant and sympathetic. We transcribe verbatim. "Has your printer got a cold in his 'dose,' or is Williams' Giant Logpod Bean in the advertisement facing page 21 last week a new variety?" The printer's reply to the inquiry is that he "accidentally left the 'hen' out," and goes on to say that if it were a case of nasal infirmity the inquirer would have been confronted with Logpod Bead. He adds as a pendant, "Will your correspondent order a quart or two, and kindly send a dish for our next Beanfeast?"

— LEE, BLACKHEATH, AND LEWISHAM HORTICULTURAL SOCIETY.—As briefly announced in our last issue, the twenty-sixth annual meeting of this Society was held on Monday, January 9th, at the Institute, Lee, there being a good attendance of members. The Chairman complimented the members upon the completion of a quarter of a century of useful work, and upon a satisfactory financial statement, which showed a balance in hand of about £31, although a larger amount had been paid away in prizes. The election of the new Committee (twenty-four in number) and the election of the Bishop of Southwark as a member and patron (making the second bishop elected in two years) were then proceeded with. Votes of thanks were accorded to the various officers and special prizegivers, the Press, and the Chairman. At the next meeting, to be held on the 27th inst., a paper will be read by Mr. G. Gordon.

— GARDENERS' FRIENDS AND ENEMIES.—This was the title of an exceedingly interesting and instructive lecture delivered by Mr. C. E. Pearson, of Messrs. Pearson & Sons, Chilwell Nurseries, Nottingham, before the members of the Wakefield Paxton Society, at their usual weekly meeting recently. Ald. Milnes and Mr. B. Whiteley, two of the Vice-Presidents, occupied the chair and vice-chair respectively. Considering the exceedingly inclement state of the weather, there was a good attendance. The lecture was illustrated by a large number of photographic views, which were admirably exhibited by the oxy-hydrogen limelight. Mr. Pearson quickly convinced his attentive and most appreciative audience that he thoroughly understood the subject on which he had undertaken to lecture, and that his advice was based on personal experience and practice, and not merely on theory. He exhibited views of a large number of slugs, grubs, caterpillars, and moths in various stages of life, pointed out how and where they generally increase and multiply, referred to the great damage which they do to growing crops, and explained the best means of getting rid of the destructive pests. Mr. Pearson also exhibited views of insects which are the gardeners' best friends, and he strongly recommended his hearers to preserve such insects and toads.

— MANURES.—This was the subject of a lecture delivered before the members of the Winchester Gardeners' Association by Mr. A. Dean, of Kingston-on-Thames, under the auspices of the Hants County Council, at the Society's Rooms, on the evening of Thursday, January 12th. There was a large attendance of members, presided over by Mr. Lowndess, lecturer on horticulture for Hampshire. Mr. Vaughan, Cornish Technical Education Secretary, was also present. The subject was dealt with from a gardener's point of view, and was illustrated not only by the aid of diagrams, but also by numerous samples of artificial manure, kindly furnished by Mr. E. Luckhurst and by Messrs. H. and E. Albert, of Graecchurch Street, City, who also sent a large number of Dr. Wagner's admirable pamphlet on plant foods, which were distributed amongst the members. A very hearty vote of thanks was awarded to Mr. Dean at the close of the lecture.

— DOUBLE CHINESE PRIMROSES.—I noted several good plants of the Double White Lady, a pure white variety, blooming freely recently at Hackwood Park. Mr. Bowerman marvels that anyone should make so much of the old Alba plena, or even of its improved form, when such varieties as White Lady can be grown so easily and produce such very fine double flowers. When grown well, so as to make really specimen plants as I have seen them done occasionally, the bloom production is relatively treble what can be obtained from the old Double White. By relatively I mean that fully three flowers of the latter are needed to make one of the former. It is not easy to get these plants to grow unless they are thoroughly understood, but then those who do them well find no difficulty in the cultivation. Side shoots make good cuttings in the spring. These are grown on in small pots in sandy loam, helped by one-third old decayed manure. Plenty of light and air during the summer and a gentle warmth in the winter suits them.—D.

— LARGE TOMATOES.—I was interested in your answer on the above subject to "E. G. N." (page 40), for I am rather in favour of Ponderosa as a useful and paying variety. The proper colour of it is dark crimson, and a very truthful representation of it is before me now in Messrs. Henderson's (New York) catalogue. But I selected a scarlet fruit out of the first batch of plants I grew, and I find this a large and handsome Tomato of very excellent quality. Most of the fruits weighed from 6 ozs. to 14 ozs., and they certainly were not coarse. Why does Mr. Gilbert exhibit it under name of Royal Sovereign? The continual renaming of one and the same variety leads to no end of mistakes and continual expense. How often have I found when I possessed a good strain of something, and have sent for "Jones' World's Wonder" and "Smith's Eclipse" at high prices, I have, when all came to maturity, found them identical with what I already possessed. How annoying is this! This ought in some way to be amended. A man should have a right in his own introduction—vegetable, fruit, or flowers of his own raising—and gardeners ought to be safeguarded against buying one and the same variety under half a dozen high-sounding names and at high prices. As you truly state, Perfection is the Tomato for exhibiting. It is not a heavy cropper but it is a fair one, and the colour and form cannot be excelled. I see in Henderson's (New York) catalogue a first prize of £30 (150 dols.) was given for Ponderosa Tomato to the grower of a 3 lb. fruit. £20, £15, £10, £7, £6, £5, £4, £2, £1 were given for smaller fruits. These are prizes indeed, and make the English exhibitor's mouth water.—H. S. EASTY.

— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR THE YEAR 1892.—Mean temperature of the year, 45.9°; maximum on the 3rd of July, 81.0°; minimum on the 16th January, 7.2°. Maximum in the sun on the 3rd of July, 136.3°; minimum on the grass on the 9th of January, 1.2°. Mean temperature of the air at 9 A.M., 46.5°; mean temperature of the soil 1 foot deep, 46.9°. Number of nights below 32°, in shade, 107; on grass, 183. Total duration of sunshine in year, 1261 hours, or 29 per cent. of possible duration; we had eighty sunless days. Highest reading of barometer on March 30th, 30.680; lowest reading of barometer on 2nd February, 28.926. Total rainfall, 22.22 inches; minimum fall in twenty-four hours on 28th June, 1.32 inch; rain fell on 168 days. Average velocity of wind, 9.1 miles per hour. Velocity exceeded 400 miles on thirty days, and fell short of 100 miles on seventy days. Approximate averages for the year—mean temperature, 47.9; sunshine, 1227 hours; pressure, 29.932; rainfall, 24.54 inches. The year was dry, very cold, but fairly sunny. The mean temperature was lower than in any of the previous sixteen years, except 1879. The only month in which temperature was substantially above the average was May, and it was slightly above in November. In the remaining ten



months it was below the average, in October and December by more than 3°, and in March and July by more than 4°. The nights were especially cold, and the number of frosts large, though the extreme minimum was not exceptional.—J. MALLENDER.

— ALLAMANDA HENDERSONI.—Growing in 9-inch pots in one of the houses at Hackwood Park are three plants of this Allamanda. They stand on the front stage, the growths being trained on wires under the roof. When I saw them a few days since they were blooming freely, and would certainly flower for yet a couple of months. Mr. Bowerman states they had been blooming most profusely since early in June. What a great number of flowers and of what considerable value had they been in the six months mentioned. One reason why the plants had flowered so long was the fact that they were somewhat root-bound, and had been kept in a comparatively moderate temperature.—D.

— RASPBERRY BAUMFORTH'S SEEDLING.—Although the above-named Raspberry is probably well known, I should like to add a word of praise in its favour. I have grown it now for five years, and find it excellent in all respects. It is a free grower and cropper, the fruits of large size and fine colour. Grown side by side with Carter's Prolife and Fastolf it is superior to both. When made into a preserve it is of the most beautiful colour, remarkably rich in flavour, and with an agreeable juiciness, which latter quality is often absent in many varieties when so prepared. I would recommend anyone in request of a good variety for this particular purpose to give it a trial; I am sure they would esteem it most valuable, or, in fact, for any purpose.—J. J. C.

— LECTURES AT THE ROYAL HORTICULTURAL SOCIETY'S MEETINGS.—The following lectures are arranged to be given at the meetings of the Royal Horticultural Society during the current year:—March 14th, "Some Effects of Growing Plants under Glass of Various Colours," the Rev. Professor Henslow, M.A. March 28th, "Flowers of the Riviera," Mons. Henri de Vilmorin. April 11th, "Orchid Life in Guiana," Mr. Everard im Thure. April 25th, "How to Solve Chemical Questions Concerning the Soil without Chemistry," Professor Cheshire. May 9th, "Fritillarias," Mr. D. Morris, M.A. June 6th, "Hardy Rhododendrons and Azaleas," Sir J. T. D. Llewelyn, Bart. July 25th, "Alpine Houses and their Inhabitants," Mr. H. Selge Leonard. August 8th, "Cannas," Mr. J. G. Baker, F.R.S. September 12th, "Garden Phloxes and Pentstemons," Mr. J. Douglas. September 26th, "Causes of Failure in Eucharis Culture," Mr. W. Iggulden. October 10th, "Pears," Mr. W. Crump. October 24th, "Onions," Mr. A. Dean. November 14th, "Chrysanthemums," Mr. R. Parker. November 28th "Late-keeping Grapes," Mr. T. Crasp.

— THE GARDENERS' ORPHAN FUND.—In your notice in last week's *Journal* under the heading of "Royal Patronage for the Gardeners' Orphan Fund," after announcing the contribution from Her Royal Highness the Princess of Wales (a very gratifying announcement truly) in mentioning other donations there is one of £5 from the Carnation and Picotee Society's Show, Edinburgh. This is a mistake, as there is no Scottish Carnation and Picotee Society, and the donation in question was sent by the Committee of the Midland Counties Carnation and Picotee Society, Birmingham, who at the same time sent a donation of £5 to the Gardeners' Royal Benevolent Institution, both on the proposal of Mr. Robert Sydenham. I should not trouble you to correct this, only as it gives me an opportunity of saying that it is in the power of so many horticultural exhibition committees to go and do likewise in a lesser or larger degree. Last year at a large exhibition under my control we had a special tent and staff of young ladies for the sale of Roses and other flowers purposely to benefit the Gardeners' Orphan Fund and our local children's hospital, but a downpour of rain upset our arrangements; still, as it was we contrived to send £3 to each institution. With fine weather we should have made it fully £10 to each. The Orphan Fund has in our local Secretary Mr. J. Hughes, an energetic worker and friend, and I think I may say that no other local secretary has sent up so much money to the general fund as he has. At many of our exhibitions he has collecting boxes in use, often by intelligent little girls, who ask for contributions, and Birmingham has done some good work for the Orphan Fund. But much more is wanted, and the Gardeners' Royal Benevolent Institution should also be remembered, for both Institutions are truly gardeners' friends and doing an immense amount of good.—W. D. [The error alluded to was purely clerical. It was discovered and a correction made prior to the receipt of this communication, but not now inserted. Birmingham is one of the best supporters of our gardening charities, and Mr. Hughes is regarded as a model local Secretary.]

— MARKET PRODUCE.—I marvelled to read on the testimony of "an authority" that the whole of the vegetable produce of England is grown in the Thames valley and the home counties. Of course enormous quantities are grown in districts remote from London. Probably the authority meant to have said the whole of the English produce sent to Covent Garden or London markets was so grown, but that even would not be entirely correct unless the term "home counties" was to be regarded as very expansive. Middlesex certainly does produce many vegetables and much fruit, but it is a very small county after all. The most remarkable thing is that the County Council does nothing at all for the industry.—A. D.

## IN MEMORIAM.

THE REV. FREDERICK TYMONS.

THE opening days of 1893 have brought with them news that will sadden many a reader of the *Journal* when he learns that that genial, hearty, and enthusiastic florist, the Rev. F. Tymons of Baskin Hill, Drumeondra, Co. Dublin, has passed away, although he was known only to a comparatively small number on this side of St. George's Channel; but in Dublin and its neighbourhood he was well known and deeply valued. His great love for the Auricula at one time brought him frequently to England, and he assisted at the judging of those favourite flowers of his, a capacity in which I have been associated with him. His taste was severe. He had been brought up in the strict school of the Dublin florists who followed the steps of the Lancashire growers, and, as a consequence, the loose notions which at that time prevailed with those who ruled the Society were very distasteful to him. I shall never forget his indignation when, after we had carefully gone through larger classes, we were asked to reconsider our adjudication, and alter it because of the superior way which some were set up! He had no sympathy with what seems too often to be considered the desideratum—a truss with a dozen pips upon it, large in size, and coarse in texture. He was a thorough Irishman, full of the quickness and ready wit which characterises the race; thus on one occasion when he came across a stand on which was quite a second rate flower, St. Agustine, he said, with a merry twinkle of his eye, "Who canonised that Saint?" Equally striking was his protest against the staking of Auricula blooms at the Exhibition, "If they want crutches they had better stay at home." I have mentioned the Auricula because it was through it he was best known to English florists, and because, although he had many loves (as a florist), I believe this flower held the chief place.

I once had the pleasure of visiting him at his pretty home at Baskin Hill, and truly it was the home of a florist, for florists' flowers of all kinds—a small but very choice collection of Auriculas, Pansies, Carnations, Tulips, Dahlias, and Roses, all found a very happy home at Baskin Hill, while he had in his greenhouses very choice and valuable plants, and a fine batch of *Disa grandiflora*. He took the keenest interest in herbaceous plants, and his borders and rockery were filled with choice plants. Never have I seen anywhere such masses of the white Martagon Lily as there; but in truth everything was carefully looked after by the master himself.

He was a constant exhibitor at the Royal Horticultural Society of Ireland's Exhibitions, and a very successful one, and he will be greatly missed there; but he was one of those men to whom the prize was a secondary matter. He loved plants and delighted to see them honoured. And thus another home of the florist is broken up; but his memory will be cherished by many—indeed, by all—who knew him. Mr. Tymons was unmarried.—D., Deal.

## GOODRICH COURT.

AMIDST surroundings of surpassing natural beauty stands the above mansion, the delightful residence of H. C. Moffat, Esq. The Ivy-clad ruins of Goodrich Castle occupy a commanding site well in view of the house, and skirted by the waters of the famous Wye, on their serpentine course, *viâ* the renowned "Symond's Yat." "Aggressive" and "Progressive" are the mottos in gardening matters at Goodrich, and within the last few years an extensive, complete, and conveniently arranged modern garden has been formed on a better site than the old and scattered one. In effecting such a radical change, Mr. Spencer, the energetic and courteous head gardener, has had his hands full, and for purposes of economy, as well as to have as much accommodation as possible, he saw his way to press the old glass structures, or many of them, into the new service, and so well has this been effected that appearances everywhere are as good as new. Conveniences in way of sheds, Mushroom house, stokeholes, and efficient boilers are well provided, also a comfortable bothy for the young men, a matter too often sadly neglected.

The vineries form a splendid range, and the Vines are already giving a good account of themselves, among them Alnwick Seedling, Mrs. Pearson, Duke of Buccleuch, Muscats, with the indispensable Lady Downe's have all done wonderfully well in the short time that they have occupied their quarters. A good border has been made inside as well as out, wherein a prepared compost, a great proportion of which is the rich, native, maiden loam, has been provided at intervals, new portions being added as the roots penetrate that already at their disposal, thus escaping that scouring of the border generally consequent by continual watering on



too great a body of soil. The same rule has been adopted and followed in the Peach range with equally satisfactory results. Thus Mr. Spencer, by adding breadth to his borders occasionally, regulates the growth and also the character of the wood that is made. An abundance of ripe Melons cannot always be seen at the end of October, but here we saw such, also Tomatoes on plants calculated to keep well in bearing through the winter. The Pine Apples suffered by removal from their old quarters, but are fast recovering themselves, and some young sturdy plants are evidently the right sort for producing grand fruit. *Calanthes* occupying shelves in Pine stoves were carrying fine spikes, but our visit was too early for these.

In the Orchid houses proper there was a good display of bloom.

Among *Cattleyas* good plants and forms of *C. aurea*, *C. Gaskelliana*, *C. Sanderiana*, and *C. Skinneri* were noteworthy.

Palms, Ferns, and foliage and flowering plants were thriving in the stove and greenhouses. In one of the latter Mr. Spencer has capital specimens and half-specimens of *Statice profusa* and *S. Holfordi*, clean and healthy, such as are not frequently seen. These have been well grown at Goodrich for years. *Marantas*, *Anthuriums Veitchi*, *Andrcanum*, and *crystallinum*, with *Ixoras* and *Dipladenias* as specimens, are pictures of health in the stove, with numbers of young plants for immediate and future use. A batch of Winter Cheer Carnations confirmed all that has been said about this excellent variety. *Lachenalias* were also exceedingly good. These plants deserve to be more generally cultivated. Another plant



FIG. 8.—A VIEW IN THE ORCHID HOUSE AT GOODRICH COURT.

*Lælia purpurata* and some of its varieties, particularly *L. p. alba*, were conspicuous, the plants being exceptionally fine and in excellent health. Indeed, all the plants bear the same stamp of healthiness, and although Mr. Spencer does not pretend to make a specialty of Orchids, the collection is certainly meritorious, and contains several rarities. *Aërides*, *Vandas*, and *Saccolabiums* were equally at home with *Cattleyas*, *Lælias*, *Oncidiums*, and *Dendrobiums*. *Lælia Perrini* was better cared for than we often find it, and *L. albida*, *L. anceps*, and its forms were well in evidence. *Cattleya Bowringiana* was noticeable, and of *Lycastes* there were some very fine forms. There are good plants of *Cypripedium Spicerianum*, one of which we have seen carrying forty spikes. Large numbers of *C. insignis* are grown, and are found useful for cutting and decorative purposes. *Angraecum eburneum* and *A. sesquipedale* both thrive and flower well, as also do *Anguloa Clowesi* and *Stanhopeas*.

noticeable as a trailer or climber was *Tropæolum Clibran's Gem*, of a very dark hue, and sent out by Messrs. Clibran & Sons. Another good thing was *Begonia geranioides*, which, as grown at Goodrich, is a decided acquisition.

A heavy crop of Mushrooms in the new house was shown us. The kitchen garden, though culinary crops were abundant, is only yet in its infancy, and the fruit trees are but young and the walls unfurnished. All, however, are most promising of an early and complete success. The gardener's house is also new, and is such as only a considerate employer would erect for his gardener. In addition to being commodious it also stands in the best possible position for the conditions of health and extent of view.—BRADWEN.

[The illustration (fig. 8) represents a view in one of the Orchid houses at Goodrich Court.]





## CROYDON CHRYSANTHEMUM SHOW.

WE are informed that the Croydon Chrysanthemum Show, being unavoidably postponed, will take place on November 14th and 15th, instead of November 8th and 9th, as already noted.

## GOLDEN WEDDING CHRYSANTHEMUMS.

WE are glad of the opportunity to say to the readers of the *Journal of Horticulture* that Messrs. H. Cannell & Sons, of Swanley, are sole agents for the sale of our grand new Chrysanthemum Golden Wedding in England and on the Continent. We have not sold any stock to anyone else, and will not sell any for the ensuing year.—PETER HENDERSON & Co., *New York*.

## MRS. LOUIS CHILD MADEIRA CHRYSANTHEMUM.

THIS variety promises to be one of the very best late incurved Japanese yet in commerce. I have now, January 12th, a beautiful bloom on a young plant struck last July. Its colour is that of Mrs. Robinson King, and the flower forms a beautiful golden sphere. In the *Journal*, December 29th, 1892, there is a notice of this variety, and it states that a Mr. R. Craig is the raiser. Such is not the case. This and many other good ones of American origin, such as Marvel, R. C. Kingston, E. W. Clark, Master Bates Spaulding, were raised by my old friend and comrade, Henry B. Surman of Germantown, Philadelphia, U.S.A.—CHAS. LAWTON, *Welton Gardens, East Yorkshire*.

## LYGUS CAMPESTRIS AS AN ENEMY TO THE CHRYSANTHEMUM.

A CORRESPONDENT of "Nature Notes," resident at Acton, reports that he has found the above bug frequently on garden flowers, and says that it seems especially partial to the Chrysanthemum. It is a pretty green insect, and might have passed as harmless had it not been detected in the act of piercing the unexpanded flower buds with its beak or rostrum, thereby causing them to die off. It has apparently, like some other bugs, a taste for what is bitter or aromatic; but it does not attack the buds to deposit eggs upon them. We have no information as yet concerning the early stage of this bug, nor of many more; but some suppose the larvæ may occasionally prey upon other insects, which would be a set-off to the damage done by the mature insect. There appears to be no way of checking it, except the removal of any individuals that may be seen.—J. R. S. C.

## CHRYSANTHEMUMS FOR PROFIT.

I READ "Enfieldian's" useful article, at page 13, with much interest. He speaks of Madame Louise Leroy as somewhat displacing Elaine. I think the former variety decidedly the better of the two, and it is equally as free as Elaine. Each flower, moreover, is perfect, never showing the black centre. Speaking of black centres reminds me that Chevalier Damage has that tendency. I consider President Hyde better in every respect. I also strongly recommend Massalia as a bright crimson; it is much freer than Cullingfordi, though that variety should not be despised, as it is grand in colour and some days earlier than Massalia, which makes the latter of more value really. We have Massalia good now; it produces more blooms on a spray, while it carries its flowers well, the stems being stout. We have grown the two side by side, and Massalia certainly produced double the supply of its neighbour, which is saying much in its favour. Another variety I would like "Enfieldian" to try is Frank Wilcox, for late work; it is a reflexed variety, bright golden yellow, and overlaid with bronze; a most showy and attractive flower, very free, strong grower, and dwarf in habit; requires but little staking. For earlier work Gloire du Rocher will prove good, as it is very free and showy, being much the colour of Val d'Andorre, without the stiffness attending the latter kind. Florence Percy (white) is well worth growing, and should be in all collections where cut flowers are a speciality; it is very free, and the individual blooms have a whorled appearance, making it quite distinct.—J. PITHERS.

## JOHN LAMBERT CHRYSANTHEMUM.

HAVING carefully watched this wordy duel, I am greatly surprised at Mr. Molyneux's answer to Mr. Lambert's straightforward question. To my mind Mr. Molyneux evades the real point at issue, which, I think, is this. Did Mr. M. or did he not erase the name "John Lambert" and substitute that of "Golden Queen of England" to the champion incurved bloom in Mr. Coombes's stand at the last Hull Show? If so, what justification had he for so doing?—A YORKSHIRE BITE.

MR. MOLYNEUX accuses me in his last note (page 37) of being wide of the truth; let him first prove this. I have proved this case at Hull against him. He mentions Liverpool where we judged, and left John Lambert as we found it, and had he acted in this way at Hull these lines would never have been written. Let Mr. Molyneux act fairly, and treat this like it is treated by all other Judges and at the National shows, and I am content; but if he still persists in going on one side

to insult this variety he will find me on the war track as often to defend my progeny. At Birmingham in 1890 Mr. Molyneux judged, and for John Lambert, as shown by me in my first prize stand in the open class, Golden Queen is reported to be shown, and not John Lambert. This report is corrected in your *Journal*, page 496, December 4th, 1890. Notwithstanding the opposition of Mr. Molyneux to this sport, it has gained public favour, and when such men as Messrs. Parker, Blair, Doughty, Shoesmith, Goodacre, Coombes, and many others, show it in preference to Golden Queen of England it is a proof of its superiority, and your other correspondents unknown to me think it is not treating it fairly.—JOHN LAMBERT, *Powis Castle*.

## HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.

THE ninth annual meeting of the Hull and East Riding Chrysanthemum Society was held on January 11th, at the Royal Station Hotel, Mr. R. F. Jameson in the chair, when the report and balance-sheet for the past year was received and adopted, and the officers and Committee for the ensuing year were elected. The report was of a most satisfactory nature. Over 10,000 visitors of all classes were admitted to the Show in November last, and the exhibits generally were of a very high order of merit, whilst the balance-sheet showed that a profit of over £52 had been made on the year's working of the Society. Funds in hand now amount to £341. Votes of thanks were unanimously passed to the Mayor and Sheriff for their generous gifts of a silver cup each, value five guineas, for competition at the next Show, as also to Mr. James Reckitt, of Swanland Manor, who had promised to give a silver challenge vase, value 20 guineas, in the class for a group of Chrysanthemums interspersed with foliage plants. It was also announced that Mr. Harold Reckitt had promised to give a prize, value five guineas. The officers and Committee were elected as follows:—Chairman, Mr. R. F. Jameson; Vice-Chairmen, Messrs. George Bohn, Captain Brodrick, Major Dibb, and James Reckitt; Hon. Treasurers, Messrs. Charles Judge and Thos. G. Milner; Hon. Secretaries, Messrs. Edw. Harland and James Dixon; Committee, Messrs. A. S. Ayre, W. S. Brodrick, G. Cottam, jun., J. H. Fisher, E. Goddard, Allen H. Hall, F. W. Jameson, R. E. Johnson, R. W. Judge, G. A. Haldane, A. W. Stanley, and W. Wheatley. Messrs. George Duncan and W. H. Wood were re-elected Auditors. Messrs. G. Gordon, E. Molyneux, and J. Wright have been desired to officiate as Judges on November 15th and 16th.

## THE BEAUTY OF EXMOUTH CASE.

I AM surprised to find (page 37) Mr. H. Cannell asserting that I am "dissatisfied with the Chrysanthemum people generally." Will Mr. Cannell be good enough to state upon what evidence he makes such an assertion? and I deny most emphatically the insinuation that I am one of those persons who "find fault with the world generally." Like Mr. Cannell, I have no reason to do so. I agree with him to the extent that the "Beauty of Exmouth" case is bringing discredit on the N.C.S., but the blame rests, not on my shoulders, but rather on that of the Society in question through a glaring indiscretion of one of its Floral Committeemen and the way it has been met.

Permit me to inform Mr. Cannell that I am just as anxious to "denounce anything discreditable or unfair" as himself, and it was this feeling which prompted me to act as I have.

I stated in my first letter (page 418, November 10th, 1892) that it was Mr. Cannell who requested that a bloom of Florence Davis be brought to the table, and I am not aware that anyone has disputed that statement, and I believe Mr. Cannell had the best of motives in acting as he did. Again, no one has questioned the number of times that he or any other member has attended the meetings or the lack of interest they have shown in the Society. Surely Mr. Cannell has not read my first letter to the *Journal*.

Will you grant me space to repeat shortly that prior to my blooms being placed before the F.C. for certificate a member ridiculed them in a most unbecoming manner, and this in the presence of several members of the F.C. Was this in his business capacity, Mr. Cannell? In Committee he voted twice against the granting of a certificate. This he had a perfect right to do if he thought the variety did not merit the honour; but he afterwards wished to purchase the whole stock of the variety at a big price, and getting a negative answer from me, inquired the price per 100, "as such a variety as that was bound to sell," adding his reason for voting against the granting of a certificate was because Beauty of Exmouth would cut out one of his introductions.

These are the circumstances which Mr. Cannell says call for no inquiry. If this be his idea of what is strictly right and proper I fear it does not merit such an amount of self-laudation as is bestowed upon it.

Mr. Harman Payne's remarks *re* the Beauty of Exmouth call for a reply from myself. Will Mr. Harman Payne be good enough to state why the Committee could not investigate this case without fear of incurring a libel suit, the same as the "Wells" case was gone into? First it was, "We can do nothing until the alleged offender's name is published;" now the cry is, "We fear a libel suit." I agree with Mr. Harman Payne when he says, "There ought to be a preponderance of evidence on one side or the other, and not an equality." It is for this reason I urge a thorough investigation, and let it be continued until I am proved right or wrong.

I should scorn to shelter myself behind the "law," or to take advantage of any of its technicalities. I am perfectly willing, as Mr. Fowler suggested at the General Committee meeting (reported on 553 December 23rd) to "waive any legal right," and I am also willing to sign an undertaking not to prosecute anyone for anything he may say in an



investigation to prove me wrong. That is what General Booth did, I believe, prior to the investigation into his case, and I cannot conceive of anyone who is not ashamed of the truth hesitating for a moment to do the same, and act in full accordance with Mr. Fowler's proposition, which is just such a one as we might expect from a high-minded gentleman. Has Mr. Cannell anything to say against it?—W. J. GODFREY, *The Nurseries, Exmouth.*

#### INCREASED SIZE OF STANDS.

MUCH has been said of late as to the desirability of increased space for the full display of the Japanese blooms. From the reports published the Conference recently held under the auspices of the N.C.S. regarding this matter, has been by the action of the General Committee of that Society rendered nil. Although the meeting of October 12th was almost unanimous in its decision that the time had come when an increase was imperative. I approve of the action of the General Committee in not making the rule absolute. At the same time, I think many stands of blooms would be the better if more space was allowed, but to compel those who do not favour the extremely large and spread-out examples of some exhibitors to adopt a larger stand than the orthodox one would be unfair. We cannot legislate for a few to the detriment of the mass. The former, under existing conditions, have their remedy, but few Societies now-a-days limit the size of stands for the Japanese blooms. None ought to do so; if this were the rule all classes would be met. No one could then complain of defective judgment owing to the blooms not having space to show themselves.

If there is an advantage in giving more space to the larger blooms, surely the smart exhibitor would not be slow to avail himself of the opportunity. All that is wanted is a few object lessons from some of the leading exhibitors, distinctly showing the advantages there are to be gained by the use of larger stands, and if others do not follow suit I shall be very much surprised. Nothing could be more objectionable than small or even medium-sized blooms displayed on stands much too large for them. Not only is the exhibitor at a disadvantage, but the Society is compelled to provide table space in excess of the requirements of the case.

Personally, I do not believe in conferences, at least not for the amount of good that is supposed to emanate from such meetings. That they are very pleasant gatherings I do not doubt, but instead of so many of these I consider that a few practical object lessons at some of the leading shows would do more towards achieving an object than much talk. What has brought Chrysanthemum culture to its present state? Nothing but object lessons. I daresay, if those who go about the country during the exhibition season were asked how many stands at each Show needed an increase of size, the answer would be not more than five out of every fifty. At least this is my impression gained from the few shows that I see during a season. Let all societies allow an extension for the Japanese blooms, but let it be optional and with a provision as to the limit of the extension. It would never do to allow all to employ whatever size they thought fit. The compilation of the different sizes suggested by exhibitors in a contemporary a short time since proved the fallacy of this plan. While some were content with a slight increase upon the present size, a few others went in for a great reform.—SADOC.

#### NEW CHRYSANTHEMUMS.—(Concluded from page 38.)

THE Japanese varieties are becoming so numerous that some judgment is required to make a selection of the best. The incurved forms predominate, and some of them are scarcely to be distinguished from the strictly incurved varieties.

*Emily Doone.*—This is a charming variety, centre creamy white, shading to soft pink in the outer florets. I consider this an improved Puritan when properly grown.

*Fred Dorner.*—Clear primrose yellow, with a faint salmon tint on the outer florets, reflexed in form, a fine bold full flower, quite up to exhibition form; dwarf habit and very free.

*Mermaid.*—A grand solid bloom with stout pointed incurving florets, delicate cream colour shading to pink; a strong grower, 5 feet 6 inches in height, requires stopping about the middle of May.

*Mistletoe.*—This is quite distinct, a large incurved flower of good form, colour delicate silvery pink, very full, and will make a good exhibition bloom. Our best blooms were from plants struck in March, taking the first bud. These plants were grown in 7-inch pots, and were about 2 feet in height.

*Mrs. J. R. Baylis.*—A large incurving bloom, colour clear golden yellow striped chestnut red, florets very broad and of rare substance. It will make a grand grouping plant; it seldom exceeds 2 feet 6 inches. The plants should be stopped about the 1st of May.

*Robert Flowerday.*—This is another incurved Japanese of immense size, very broad florets, colour rich crimson purple, with silvery reverse. A grand show bloom, strong grower; height 5 feet. Should be stopped the first week in May.

*John Dyer.*—This variety has some promise about it. Colour yellow, overlaid with bronzy red. A fine bold bloom, strong grower; height 5 feet 6 inches.

*John Farwell.*—This has been grand with us. Colour of the richest crimson, the florets drooping after the fashion of Sunflower; quite up to exhibition size. Some growers have failed with this kind by taking the buds too early. To get it at its best the plants should be cut back about the end of May or struck late. The blooms requires plenty of heat to develop properly.

*Mrs. E. Beckett.*—A handsome white variety, the flowers composed of long twisting drooping florets. A grand show bloom, distinct. It is a very strong grower, of dwarf habit.

*Mrs. H. W. Goulden.*—When well finished the bloom of this is typical of a good incurved, for which it was often taken last November. Outside of florets soft blush pink, inside deep lilac; a tall grower.

*REFLEXED.*—*A. J. Banks.*—A charming pretty flower, primrose yellow; rather small, but will prove a very useful decorative variety; a sport from Felicity, but a fuller bloom.

*R. Smith.*—This is a mahogany coloured sport from Dr. Sharpe. The colour was much wanted in this class, and this variety should be in every collection where reflexed blooms are a speciality, as it possesses all the merits of its parents.

*ANEMONE-FLOWERED.*—*Delaware.*—This is decidedly one of the very best large-flowered Anemones that has appeared for some time. This variety will produce half a dozen blooms on a plant, each flower being 6 inches across. The guard florets are white, cushion pale primrose. A remarkably strong grower, though of dwarf habit.

*ANEMONE POMPON.*—*Emily Rowbottom.*—A beautiful white sport from Marie Stuart, but has a better cushion than its parent. A most useful kind either for exhibition or for cutting.

*POMPON.*—*W. Saby.*—A bright golden yellow—an excellent kind for cutting.

*SINGLE.*—*Mrs. Charles Seeley.*—This was raised at Chilwell. It is most distinct in colour and of good form, the colour is of a delicate creamy white, keeping good a long time.—J. PITHERS.

#### ROYAL HORTICULTURAL SOCIETY.

JANUARY 17TH.

THE Drill Hall was not full on the occasion of this, the first meeting of the year; but a fair display of Orchids, groups of Cyclamens, Daffodils, winter Begonias, Chrysanthemums, and a large collection of Apples made up an attractive Exhibition.

**FRUIT COMMITTEE.**—Present: P. Crowley, Esq. (in the chair), with Rev. W. Wilks, Arthur Veitch, G. Bunyard, J. Cheal, Harrison Weir, G. W. Cummins, T. J. Saltmarsh, G. Burrell, A. Dean, A. H. Pearson, G. Norman, H. Balderson, C. Ross, G. Wythes, J. Hudson, G. Sage, A. J. Laing, G. Reynolds, and J. Wright.

Prior to the commencement of business the Chairman, in a few pleasant words, welcomed the members, making special allusion to the new ones, and trusted that good and harmonious work would be done by the Committee during the year. Mr. Crowley's good wishes were cordially and unanimously reciprocated.

The first duty of the Committee was to examine a number of seedling Apples sent by Mr. Becker from Jersey, but all of them were decidedly inferior to the best varieties in general cultivation. Mr. J. Butler, Broke Hall, Nacton, sent a seedling Russet Apple, which was not in good condition nor represented by the requisite number of fruits, and was passed. Mr. Barron placed on the table large handsome fruits of Blue Pearmain Apple, an American variety, symmetrical in form, distinct in colour, tender and pleasantly flavoured. Tree a good bearer (award of merit). Mr. R. Maher sent a dish of Stamford Pippin Apple, medium sized, sharply flavoured fruit. He also sent a dish of transparent-looking Apples of attractive appearance, decided to be Winter Peach (vote of thanks). Mr. Turton, The Gardens, Maiden Erlegh, sent a dish of Annie Elizabeth Apple, fine firm fruits, a long-keeping variety, but the tree is a shy bearer till it attains age (vote of thanks).

Mr. A. Dean placed a dish of very fine Oranges on the table grown in Palestine, and known in the market as Jaffa Oranges because they are shipped from Jaffa. The fruits were large, oval-shaped, seedless, and good, but these Oranges are better later in February and March. Mr. H. Balderson was awarded a cultural commendation for a dish of Asparagus, white but tender. Mr. Balderson obtains a supply of Asparagus, Seakale, and Rhubarb in winter in a very simple way. He has abundance of tan at command, makes an excavation in one of the heaps in the open air, places in the roots, covers them with soil and the soil with straw, and thus produces the crops.

Mr. G. Bunyard exhibited a magnificent collection of Apples, 150 dishes, the fruits being in the best possible condition, and many of them exceptionally fine. Bismarck, Mère de Ménage, Bramley's Seedling, Warner's King, Lane's Prince Albert, Waltham Abbey Seedling, Peasgood's Nonesuch, Lord Derby, and Tower of Glamis were a few out of many that elicited general admiration. A silver-gilt Knightian medal was unanimously recommended. Messrs. Cheal & Sons staged a much smaller and interesting assortment of Apples not generally grown, and a medal was recommended.

**FLORAL COMMITTEE.**—Present: W. Marshall, Esq. (in the chair), Messrs. W. C. Leach, R. B. Lowe, J. Jennings, George Phippen, H. B. May, C. F. Bause, E. Molyneux, R. Dean, Robert Owen, W. Herbst, John Laing, George Paul, Harry Turner, Charles Noble, Charles E. Sbea, Peter Barr, Frank Ross, C. J. Salter, Walter Furze, Thomas Godfrey, Edward Mawley, George Stevens, and Owen Thomas.

Messrs. Hugh Low & Co., Bush Hill Park Nurseries, Enfield, staged a very fine collection of Cyclamens of various colours. The plants were sturdy and excellently furnished with firm, substantial foliage and well shaped flowers. A silver Flora medal was recommended for this group. Messrs. William Cutbush & Son, nurserymen, Highgate, showed some splendid Dracenas, including D. Massangeana and D. Lindenii. A bronze Banksian medal was recommended for the latter variety. Messrs. E. D.



Shuttleworth & Co. of Fleet, Hants, showed Narcissi in pots, prominent amongst which were N. Countess of Annesley, Henry Irving, Ard Righ, and obvallaris. The same firm also staged two pots of the charming Iris Bakeriana, and also a pot of Hyacinthus (Muscari) azureus. F. B. Roger Tillstone, Esq., Mouse Coombe Place, Brighton (gardener, Mr. Anderson), sent a group of Narcissus Telamoniensis plenus (common double Daffodil), which were excellent, when the earliness of the season is taken into consideration.

Messrs. Veitch & Son, King's Road, Chelsea, showed a box of Rhododendron javanico-jasminiflorum, hybrids in varieties, amongst which were some lovely shades of colour. Begonia Winter Gem was also shown by the same firm, the flowers being of charming colour. In the same pan with the Begonias were a few plants of Primula floribunda. A vote of thanks was accorded. Mr. W. C. Leach, The Gardens, Albury Park, had a group of Chrysanthemums and Poinsettias, set off with foliage plants, which produced an excellent effect. A silver Banksian medal was recommended. Messrs. H. Cannell & Sons, Swanley, Kent, sent a small group of Chinese Primulas, which had been splendidly grown, the flowers on the majority of plants being large and of excellent substance.

A vote of thanks was accorded to Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, for a basket of Carnation Winter Cheer, the plants being of good habit and finely flowered. For a basket of Pteris Reginae the same exhibitor was again accorded a vote of thanks, an award of merit being given him for a grand plant of Pteris serrulata gigantea. (See below.) Mr. Jennings, gardener to Leopold de Rothschild, Ascott, Leighton Buzzard, staged a magnificent group of Begonia Gloire de Sceaux, and a silver Banksian medal was recommended, also a first-class certificate awarded. (See below.) A group of Tree Carnations, Sir Hy. Caleroft, were also exhibited by Mr. Jennings. Mr. Godfrey, Hillingdon, Uxbridge, showed some flowers of Chinese Primulas which were very good, especially noticeable being a fine white and The Queen. Mr. Owen, Castle Hill, Maidenhead, sent a box of very good Primula flowers of various colours, also several Chrysanthemums. (See awards.)

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair). Messrs. H. M. Pollett, Hugh Low, T. W. Bond, Henry Williams, E. Hill, J. Jaques, Dr. Masters, Jas. Douglas, A. H. Smee, and F. Sander.

Messrs. Hugh Low & Co. had a group of Saccolabium bellinum, a quaint and pleasing little Orchid that is grown by few so extensively or well as by the Clapton firm. Messrs. B. S. Williams & Son contributed a mixed group of considerable beauty, Cypripediums showing up strongly in it. C. Ashburtoniae expansum, C. nitens, C. Lecanum superbum, C. Pitcherianum, Williams' variety, and several varieties of C. insigne were conspicuous amongst them. Cattleya Percivaliana, Odontoglossum Roezli were also noteworthy (silver Banksian medal). Messrs. J. Veitch & Sons sent Cypripedium Penelaus (first-class certificate, see below) and Cypripedium × Godseffianum, the latter a hybrid between C. hirsutissimum and C. villosum Boxalli, is richly coloured, leaning decidedly to the former (pollen) parent in form, particularly in the petals. The Chelsea firm also sent Phalaenopsis × Vesta (P. rosea leucaspes × P. Aphrodite), Cypripedium × Lathamianum, Cypripedium × Creon, Zygocolax Veitchi (Colax jugosus (pollen) × Zygopetalum Mackayi var. crinitum, Cypripedium × Germinyanum (award of merit, see below). Calanthe × gigas (first-class certificate, see below), Cypripedium × Phædra (award of merit, see below), Phaiocalanthe Sedeniana albiflora (Phaius grandiflora × Calanthe vestita rubra oculata), Cypripedium × macrochilum, Epidendrum × Endresio-Wallisi, Cypripedium × Aeson, and C. × Orion. Altogether a collection of exceptional interest. From the Botanical Gardens, Glasnevin, came Bulbophyllum comosum, for which a botanical certificate was awarded.

Messrs. F. Sander & Co. sent a small group but of much interest. It included the beautiful St. Albans variety of Cypripedium nitens, Pleurothallus ornatus with small dark purple white-fringed flowers, Sarcopodium Godseffianum with its curious yellow, purple-spotted flowers and hinged lip, illustrated in the Journal for January 8th, 1891, Lælia anceps gemma, Cypripedium Cœnosa (Hookeræ × Veitchi), and Masdevallia Hincksiana. R. Young, Esq., sent the richly coloured form of Lælia anceps named plumosa. C. Ingram, Esq., contributed Cypripedium Lindleyanum superbum, and W. W. Mann, Esq., Ravenswood, Bexley (gardener, Mr. Simmond), sent a remarkable plant of Cynoches pentadactylon (first-class certificate, see below). Messrs. W. L. Lewis & Co. received a botanical certificate for Cynorchis grandiflora.

#### CERTIFICATES AND AWARDS.

*Cypripedium* × *Phædra* (J. Veitch & Sons).—A hybrid between C. Lindleyanum (pollen parent) and C. Sedeni candidulum. In form and colouring this hybrid follows the seed parent closely, but the lip may be a little darker. The petals are twisted, soft rose, with lighter central stripe (award of merit).

*Calanthe* × *gigas* (J. Veitch & Sons).—A hybrid between C. Sanderiana gigantea and C. vestita grandiflora. It is of great vigour and beauty, having a bold spike containing numerous flowers. The sepals and petals are ivory white and the lip rich rose (first-class certificate).

*Cypripedium* × *Germinyanum* (J. Veitch & Son).—This is a hybrid between C. hirsutissimum and C. villosum; the former, being the pollen parent, is noteworthy for its narrow dorsal sepal and lip. The petals are those of C. hirsutissimum. The dorsal sepal is shining purple edged with green (award of merit).

*Cypripedium* × *Penelaus* (J. Veitch & Sons).—A hybrid between C. caudatum Lindeni (pollen parent) and C. calurum. This is a note-

worthy acquisition, being very remarkable for its large and massive lip which is of a bright greyish rose. The dorsal sepal is long, narrow, and pointed, greenish yellow in hue. The petals are long, drooping and twisted, soft rosy pink, and impart a most graceful appearance to the flower. It is one of the finest hybrid Cypripediums seen for a long time (first-class certificate).

*Cynoches pentadactylon* (W. W. Mann, Esq.).—A very fine plant of a remarkable Orchid. There were three flowering pseudo-bulbs, the largest being nearly a foot long and more than an inch in diameter. It bore five drooping sprays wreathed in bloom. The flower has narrow sepals and petals, white barred with reddish chocolate; the lip is narrow and clawed, the column curving upwards below it (first-class certificate).

*Chrysanthemum Mrs. E. D. Adams* (R. Owen).—A large Japanese, with long narrow florets, pink shading to white (award of merit).

*Chrysanthemum New Year's Gift* (R. Owen).—An English seedling of the Japanese class, with large flattish creamy white flowers (award of merit).

*Begonia Gloire de Sceaux* (L. de Rothschild, Esq.).—A grand decorative Begonia, having ample dark bronze-green foliage and large clusters of beautiful pink flowers. In growth it is upright but compact, and very vigorous. It is a sterling plant that Mr. Jennings has done well to show in such splendid condition (first-class certificate).

*Pteris serrulata gigantea* (H. B. May).—A large spreading form of slender graceful habit of growth (award of merit).

*Apple, Blue Pearmain* (Mr. Barron).—An American variety of good form, distinct in colour, flesh tender and pleasantly flavoured (award of merit).

#### NOTES FROM IRELAND.

STRAFFAN HOUSE, Co. Kildare, is a pleasant run of some fifteen miles to Straffan Station on the Great Southern and Western Railway. Kingsbridge terminus, Dublin, the starting point, is a noble structure, and, all things in keeping, one might fancy themselves at one of the big London termini, were it not for a superabundance of official shouting, whistling, and gesticulating, seemingly indispensable to the starting of an Irish train. We are now off, and passing the Company's works at Inchicore, reminding one of Swindon on the Great Western Railway, on through a flat country of marked agricultural character, rich looking and pleasant to the eye of the fox hunter, on the far left a low-lying chain of hills, continued from the Dublin mountains, a gradual toning down of the wild scenery of Wicklow and South Dublin to the plains of Kildare, flocks of green plover wing their way over the level lands on the right. Near Straffan Station, one of the last links in the chain of hills is Lyons, with its Fir-clad slopes, the residence of Lord Cloncurry.

From the station we have a drive of twenty minutes on a good road between high Thorn hedges, under-carpeted with the greenest of moss; on over the bridge spanning the Liffey, from which is a delightful peep of the mansion standing on the north bank of the river to which the lawn slopes. A placid looking river is the Liffey this autumn day, but apt to show its temper in a flood by swallowing up the lawn for a few hours, leaving as it recedes a deposit of mud and debris which is not wanted and carrying off the gravel from a boundary walk which is. A drive up the avenue to a side walk leading to Mr. Bedford's house, the model of what a gardener's house should be, covered with Clematis and Roses, conspicuous amongst which is Rêve d'Or; a low stone wall partly enclosing the house is capped and pocketed with a variety of choice bits of alpine, each with its neatly written tiny zinc label, all the work of Mr. Bedford's sons. A dark day in November is not the best time to trespass on one's friends or see much outside; but all that is good or rare in herbaceous plants is here, as we scan the borders en route for the houses. Some special bits are favoured with a zinc collar, others crowned with a cap glass, while others like the Liffey defy all bounds. Some time since I was admiring Linaria pallida, and not having it of course begged a bit, and got it with a most emphatic caution that it was a curse, and would overrun the garden. Well, I will forgive it if it does.

The plant houses are numerous and the collection of plants increasing yearly by leaps and bounds, for the Hon. Mrs. Barton and her well-known *chef des jardins* are always on the alert for something new appearing. Amongst such a choice collection any chance visit will see something special. This time it was a group of Vanda cœrulea with noble spikes of a dozen flowers, while near are some bits of Cattleya labiata in flower, one a particularly fine form. But the Vandas are a feast in themselves; in fact, an act of Vanda-lism to leave them till well photographed on one's mind. A fine batch of Calanthe vestita in its two forms was striking. But Orchids here are a special feature; the cool section abundant and happy-looking, but the celebrated Straffan Disas I forgot to ask for, though doubtless my old friend has a frame full in some snug corner—for to do Straffan properly one must look well into the nooks.

Ferns are numerous and fine, Adiantum palmatum in a basket arresting attention by its noble Farleyense-like pinnæ hung on pendant thread-like stems. But the cream in this class is a huge Drynaria diversifolia 6 feet across, also in a basket. Of this plant the late Dr. Moore of Glasnevin said he would travel round the world if they would give it to him when he came back; but the worthy Doctor has gone a longer journey, whilst his favourite still flourishes. Another giant



foliage plant is *Anthurium Veitchi*, with its grand foliage yearly increasing in size, its latest achievement being a leaf  $5\frac{1}{2}$  feet long. Poinsettias are all that could be wished, and, now the "mums" are waning, doubly useful; but in flowering line I see nothing to compare with that glorious harmony in blue of the *Vandas*—*chaqun à son goût*.

On leaving the plant houses we come into the kitchen garden of some 7 acres, through the centre of which runs a wall with lean-to range of fruit houses. These give a plenteous supply of Peaches, and the bulk of the Grapes come in when the big shooting parties take place. Facing the centre of this range is a large space of geometrically designed beds, mostly used for carpet bedding, to which a good deal of attention is paid here, while in front of the mansion on the slope to the river is a garden of the Italian pattern, filled in summer with the less tender things than *Alternantheras*. These gardens, in their season, are being filled with spring flowers.

Farming at Straffan is extensive, the Major taking as keen an interest in it, and in his shorthorn pedigree herd, as Mrs. Barton does in the gardens. On one occasion, some years since, Mr. Milne, the steward, trotted out some of his beauties, yearling bulls, for inspection, of which there is an annual sale, splendid sleek-coated creatures, with a habit of frisking up in your front or rear for notice in the way of poll scratching, and as we stood in a narrow way between the two rows of stalls I must confess to a feeling of relief when this part of the programme was over.

The climate here is a somewhat trying one, spring frosts extending often into summer; and my old friend, Mr. Bedford, leads a busy life, beginning the day early and finishing it with nocturnal rambles by lamplight. Seldom from home, one must think themselves favoured if you get one visit from him in return for three to Straffan, but he has the satisfaction of knowing that Major and the Hon. Mrs. Barton are not only good and generous employers, but in a recent severe bereavement have been to himself and Mrs. Bedford the kindest and most sympathising of friends.—E. K.

### POPULAR HORTICULTURE.

OFTEN in a wide and varied experience have I been impressed by the humanising influence of horticulture, but never more so, perhaps hardly ever so much, as upon the occasion of the annual meeting of the Beddington, Carshalton, and Wallington Horticultural Society, to which I went with my old friend and new neighbour, Mr. John Wright. His connection with this Society is of old standing both as judge and adviser, and the frequent appeals made to him during the meeting told one better than anything else could how highly his advice was valued.

We were early at the meeting, and it was as pleasant as interesting to watch the assembling of subscribers, gardeners, and allotment holders; to hear the cheery greetings as one after another came into the bright, warm room out of the dark, cold, snowy night, and to mark how the softening influence of fondness for a garden tells upon all classes, creates a community of interest, brings out the better nature of all who yield to its influence, forming a common ground of meeting, most pleasant for the moment, most beneficent in its effect upon the lives and character of all.

Under the genial presidency of Mr. A. H. Smee the business of the meeting was got through expeditiously and agreeably. The warm interest which he takes in the Society was apparent not only in the discussion of ordinary matters, but also in the proposal of novel and special prizes for the Show to be held on the next August Bank Holiday. Calling attention to the fact of the vegetables shown by professional gardeners and allotment holders last August being alike so excellent that the Judges had so much difficulty in coming to a decision that pointing had to be resorted to, he proposed an amalgamation of all classes, and letting them "fight it out," "and," said he, "I am by no means sure the allotment holders won't have the best of it." This proposal caused some excitement and amusement, and after much discussion it was decided to retain the existing separate classes, and to adopt a new one as an open to gardeners, amateurs, and cottagers, as a champion class. The proposal is undoubtedly excellent, admirably calculated to act as an incentive to all classes of cultivators in the neighbourhood, and to bring together one of the most interesting group of exhibits in the Show.

In addition to existing prizes for cooked Potatoes, home-made bread, jam, bottled fruit, fruit jellies, and honey, Mr. Smee offered to give £5 in four prizes for the best dinner for a man, wife, and three children at a total cost of 2s. This is a challenge to cottage economy that will put many a worthy housewife on her mettle, and as coming within the province of a horticultural society, vegetables and fruits should be encouraged as much as possible in such a competition, but meat is to be included, and the cost of the articles stated.

A fine day for the last show brought so much gate money as to enable the Treasurer to announce a handsome balance, and the proposal which it enabled him to make of granting an honorarium to Mr. G. W. Cummins, the Secretary, in recognition of his services, was received so well by the meeting as to show how much his work for the Society is appreciated. Both Mr. Smee and Mr. Wright spoke highly in praise of the allotment holders, of the excellence of the crops and system of cropping, so that in a variety of ways it was evident the Society was doing good work—work, be it said, of the highest importance, as tending to promote industry, thrift, good management, as well as kindly feeling and self respect.—EDWARD LUCKHURST.

### PSORALEA PINNATA.

FOR some reason many of the old-fashioned hardwooded plants have fallen into abeyance, and it is seldom that they are now seen in greenhouses. This is particularly the case with the *Psoraleas*, amongst which *P. pinnata* (fig. 9) is one of the best. When in bloom this species is really attractive, and should be more generally grown.

It is a compact shrub, attaining a maximum height of 4 or 5 feet, but is seldom seen so large as that. The leaves are neatly pinnated, with three or four linear pinnae. The flowers are produced freely but singly on short pedicels from the axils of the leaves near the upper parts of the growths, their colour being a bright blue, shaded lighter or



FIG. 9.—PSORALEA PINNATA.

nearly white in the centre. A compost of peat and loam, with the ordinary treatment of Cape plants grown in a greenhouse, suits the plant, and it can be propagated by cuttings.

### FUCHSIAS.

WHERE it is desirable to raise a young stock of Fuchsias every year, no time should be lost in placing a few old plants in gentle heat, keeping them well syringed with tepid water to assist in hastening the production of young growths for the supply of cuttings. Cuttings of young growing shoots that are free from flowers root readily at almost any season of the year. As soon as the shoots have two or three joints they may be inserted in light soil, about four or five in a 3-inch pot, and placed in a warm propagating frame. Where this is not available it is a good plan to insert them in a box sufficiently deep to allow a sheet of glass to be placed over them, placing the box on a gentle bottom heat. Where this plan is adopted the glass should be taken off every morning, and the condensed moisture wiped off, or the cuttings will be liable to damp.

When rooted the young plants should be removed from the propagating frame for a day or two before potting them separately, otherwise they receive two severe checks together, which must be avoided if possible, as severe checks, especially when the plants are young, are detrimental to their well-being for the remainder of the season. When well rooted they should be placed singly into 3-inch pots, and put in a temperature of from 55° to 60°, allowing a rise by sun heat.



Watering should be very carefully performed, for on no account must they be allowed to suffer from want of water. If allowed to become dry they have a tendency to ripen their wood, after which it is useless to expect satisfactory results. As soon as the roots are well round the sides of the pots the plants should be placed in 5-inch or 6-inch pots, which size will be sufficiently large enough for ordinary purposes, but where extra large plants are required they should be again shifted on into 8-inch or 10-inch pots, according to the condition of the plants. Where specimen plants are required it is more generally recommended to insert the cuttings if possible in the autumn, and keep them growing on all through the winter, but it is generally a very difficult matter to secure suitable cuttings at that season.

Fuchsias will succeed in almost any soil provided proper attention is bestowed upon them, but the best results are obtained by giving them a compost of good fibry loam not too finely broken two parts, leaf soil one part, well dried cow manure one part, and a good sprinkling of sand. Few plants are more attractive during the summer and autumn months whether for greenhouse or conservatory decoration or as specimens for the centre of vases in the flower garden. But I think by far the best effect is produced when plants are trained to the roof or pillars of the greenhouse. Where this method of cultivation is practised the plants will not require any stopping other than promptly removing all side shoots till they have attained the required height, when the point should be removed for the purpose of inducing a number of shoots to form the head; then as they grow these must be lightly strung up to the wires to prevent them overhanging the plants on the staging beneath. When the pots are well filled with roots liquid farmyard manure may be applied every other watering to great advantage.—  
GEO. PARRANT, *Ashby Lodge Gardens, Rugby.*

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE fifty-fourth annual general meeting of the members of the Gardeners' Royal Benevolent Institution was held at Simpson's, 101, Strand, W.C., on Tuesday, January 17th. H. J. Veitch, Esq., occupied the chair, and there was a fair attendance. Prior to the commencement of business affecting this meeting, however, the special resolution relative to the change and registration of the name of the Institution was confirmed. After reading the minutes of the last annual general meeting, the Secretary proceeded to read the report of the Committee and the financial statement for the past year.

## ANNUAL REPORT AND FINANCIAL STATEMENT.

The Committee of the Gardeners' Royal Benevolent Institution beg to present to the subscribers and supporters their fifty-fourth report. In so doing it is a matter of gratification to them to be able to inform the members that it is still found to be a source of great benefit to a large number of persons whose circumstances have compelled them to seek its assistance; and that the good work which it has accomplished has been and is being heartily appreciated by a considerable portion of the benevolent public who are interested in those engaged in horticultural pursuits.

The Committee made arrangements in the early part of the present year for celebrating their annual festival dinner, at which Sir Julian Goldsmid, Bart., had kindly consented to preside; but they deeply regret to state that a family bereavement prevented him so doing. These circumstances, together with the then approaching general election, compelled the Committee to postpone the festival until the autumn, when they were fortunate enough to secure the kind services of Lord Brassey. Under the presidency of his Lordship the festival proved a highly successful one, and the Committee would express their gratitude to him for his eloquent and forcible appeal on behalf of the charity. They would also tender their sincere thanks to those gentlemen who rendered assistance as stewards, and also to all those who in any way contributed to the success of the anniversary.

The Committee think it incumbent on them to place on record the munificent gift of £500 which they received in August last from their respected Treasurer and Mrs. Harry J. Veitch as a thank offering in commemoration of their silver wedding, and they take this opportunity of reminding the subscribers of the deep debt of gratitude which the Institution owes to its Treasurer for the substantial proof of the interest he takes in its welfare, and for the personal services which he is always willing to render it, and they trust that he may long be spared to continue his good work.

In the course of the past year twelve pensioners have died, and the pension of another has been withheld in consequence of an infringement of the rules. Three of the deceased pensioners left widows, who applied for a continuance of the pension, and the Committee, after carefully considering their cases and finding them satisfactory, acceded to their request and placed them on the funds in accordance with their rules.

After careful deliberation the Committee have decided to place twelve additional pensioners on their books, two of whom are recommended for a pension without the trouble and expense of an election, they having fulfilled the conditions prescribed in rule 6. The remaining ten will be elected by the votes of the subscribers in the usual way. The Committee deeply regret that with thirty-eight applicants for pensions, only twelve of whom can be successful, there must necessarily be twenty-six unsuccessful ones who will be compelled with anxious hearts to await another election. The Committee point out that the existence of so large a number of applicants is itself a proof of the need of the Institution, and is an indication of the amount of good work still

left for it to do. They therefore earnestly hope that a larger measure of support may be forthcoming to enable them to meet these ever-increasing demands, which with the present income is an impossibility, and they trust that the friends and well-wishers of the Institution may, in face of the many distressing cases awaiting aid, be stirred to greater activity on its behalf.

The Committee have also to report that, in accordance with advice received from its Honorary Solicitor, it was decided to revise and add to the existing rules of the Institution. A Sub-Committee was appointed to consider the matter, and, as a result of their labours, a special general meeting was held at which certain alterations and additions were adopted. The Committee believe that this will naturally add to the more efficient working of the Institution.

The Committee cannot conclude without referring with regret to the losses the Institution has sustained by the death of many valuable supporters, amongst whom they would specially mention the late Robert Steyner Holford, Esq., a Vice-President, whose warm-hearted liberality they for so many years enjoyed. They would also express their deep sense of gratitude to those donors who have so generously contributed to its funds; their thanks are also due to the promoters of the late International Horticultural Exhibition for the kind promise of a donation of £250, made through the Chairman of their Executive Committee.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

### BALANCE-SHEET FOR 1892.

DR.							£	s.	d.	£	s.	d.	£	s.	d.
To Balance .. .. .	..	..	..	..	..	..							838	16	11
„ Annual subscriptions .. .. .	..	..	..	..	..	..				1397	13	6			
„ Donations .. .. .	..	..	..	..	..	..	695	3	0						
„ „ .. .. .	..	..	..	..	..	..	330	13	9						
„ Thank offering for investment from Mr. and Mrs. Harry J. Veitch, to commemorate their silver wedding .. .. .	..	..	..	..	..	..	500	0	0						
„ Collecting cards .. .. .	..	..	..	..	..	..	219	10	8						
										1745	7	5			
„ Advertisements .. .. .	..	..	..	..	..	..				46	17	6			
„ Dividends on stock invested, £25,000 Two and Three-quarters per Cent. Consols .. .. .	..	..	..	..	..	..	768	0	9						
„ Interest on deposits .. .. .	..	..	..	..	..	..			9	19	6				
„ Return on pension account .. .. .	..	..	..	..	..	..	2	10	0						
										780	10	3			
													3970	8	8

Invested—

£25,000 Two and Three-quarters per Cent. Consols.

£2664 19s. 10d. Indian Three per Cents.

£497 10s. Midland Railway Three per Cent. Debentures.

On deposit with bankers..

[illegible]

Audited and found correct, January 14th, 1893.

(Signed) { JAMES WEBBER.  
JESSE WILLARD.

A resolution to the effect that the report of the Committee and financial statement be adopted was carried unanimously. Dr. Masters proposed that Mr. H. J. Veitch be re-elected Treasurer of the Institution, which proposition met with general approbation. Mr. G. J. Ingram was also re-elected Secretary; and Messrs. T. Manning, Swift, and H. Williams as auditors for the ensuing year. The arbitrators elected were Messrs. J. Buck, W. Crane, R. Gold, H. Higgins, R. A. Jack. Many members of the Committee of the Institution were re-elected. Messrs. A. Veitch, T. Glen, and O. Thomas being also elected in the place of Messrs. A. F. Barron, C. Pilcher, and J. Fraser, who had resigned according to the rules.

It was then proposed that J. Mitchell, aged seventy-seven, and Elizabeth Rogers, aged sixty-three, be, in accordance with the rules, voted on the pension list without election from December 25th, 1892. This proposition was seconded and carried unanimously. In consequence of two deaths among the pensions it was also proposed that, after the ten candidates were elected, the two next highest on the poll be elected, making, in addition to the two above mentioned, twelve pensioners. This motion was unanimously adopted.



Wynne were appointed scrutineers, and later in the afternoon declared the poll, those with an asterisk prefixed being elected pensioners of the Institution. The total number of votes polled was 42,337.

John Butler, 1559; Janc E. Nichols, 1156; \*W. Coleman, 1992; °James Munro, 2375; \*H. Woolford, 2147; \*T. H. Bowler, 1860; \*Henry Bridden, 2975; Clara E. Brown, 612; John Collier, 184; Henry Fielder, 725; Emma Kendall, 1240; \*George Macintosh, 2932; Ann Nixon, 587; \*James Ricks, 2160; Thomas Thomas, 1030; \*Samuel Tisdale, 2137; \*George Woodgate, 2183; Francis Woodhams, 737; Thomas Bundy, 97; James Clarren, 514; John Comber, 674; David Cornell, 34; Hester Falconer, 147; Thomas Gooch, 845; \*Mary Gray, 2012; John Guyett, 1113; William Hale, 49; Ann Harding, 633; \*Margaret Kefford, 2837; Richard King, 475; \*Agnes Merritt, 1931; Ambrose Minty, 170; John Pearcey, 131; Robert Pettit, 601; James Strachan, 129; Eliza Webb, 252; William Pamplin, 760.

#### THE "LARK PUDDING" DINNER.

This gathering, held in connection with the annual general meeting of the Institution, took place at the same hotel in the evening of the 17th inst. H. Seymour Foster, Esq., M.P., occupied the chair, and he was supported by a large company of members and their friends, nearly a hundred sitting down to the table. Amongst those present were the Rev. W. Wilks, H. J. Veitch, Esq., N. N. Sherwood, Esq., J. Weeks, Esq., Messrs. G. Bunyard, J. Laing, A. Veitch, P. Barr, A. Watkins, J. Hudson, G. Woodgate, and numerous other well-known horticulturists.

The Chairman, after the customary loyal toasts, gave that of the evening—namely, "The Gardeners' Royal Benevolent Institution; its continued prosperity and usefulness." In proposing this toast he said it was an excellent custom to hold this gathering after the annual meeting so that the friends of the Institution could go back imbued with fresh zeal. He had left an agricultural conference at Ipswich that afternoon on purpose to be present. Regarding the work of the Institution, he observed that in its first year the annual income was but £100, whereas last year, according to the report, it reached £3527. He noticed also that between £50,000 and £60,000 had been distributed by the Institution, and there were upwards of 150 pensioners on the list, which alone proved its usefulness. The past year was a marked one in the annals of the Institution, inasmuch as the report showed an increase in the income and a decrease in the expenditure. (Hear, hear.) He thought it was a very excellent feature to assist those who had made an endeavour to help themselves. The funds, he observed, were widely and economically distributed. He had had some experience with benevolent societies, and some he knew were organised for individuals and highly paid officials. Happily this was not the case with the Gardeners' Royal Benevolent Institution. This was managed on the most economical lines, and deserved the support and sympathy of all who took an interest in horticulture. A gardener's life, he thought, was a happy one, and, as a rule, his work pleasant; but withal it was especially desired that some provision should be made for a rainy day, as none of us knew when a day of adversity might come. It was impossible, however, for many working gardeners to make an adequate provision for old age and infirmities. He was much struck with the casualties which brought the candidates upon the list, and although fourteen pensioners had that day been elected, it was a sad fact that twenty-five deserving cases had to be turned away. All interested in the Institution should remember this and endeavour to render the Committee all possible aid, so that there may be no disappointed candidates. There were, he was glad to see, many friends of the Institution among the City companies, and perhaps he might be of further assistance in that respect. (Hear, hear.) Many others he might individualise, such, for instance, as the worthy Treasurer, who celebrated his silver wedding by subscribing £500 to the Institution; and Mr. Sherwood, who had likewise given most liberally. These were friends indeed, and so long as the Institution had such he had no doubt as to its continued prosperity. (Applause.)

Mr. N. N. Sherwood briefly responded, and said that his only regret, after such an excellent speech from the Chairman, was that there were no subscriptions collected that night. He was glad to say that the Institution is in a fairly flourishing condition, but he wished they had been able to place the whole of the candidates on the pension list. As the Chairman had said, the gardener's life, up to a certain stage, was a happy one; but there was a dark side to the picture. Gardeners had to be out in all weathers, and for the work required of them no men were so poorly paid. It was impossible for them alone to support the Institution themselves, and therefore he trusted that all who could would render assistance. There was one friend absent that night who might be regarded as the Father of the Institution. He referred to Mr. John Lee, who, he was sorry to say, was suffering from a severe illness, and he was sure that all would earnestly hope for his speedy recovery.

Mr. H. J. Veitch gave "The Chairman," and remarked that much depended upon securing the services and aid of such gentlemen. He felt confident there was a bright and happy future for horticulture. He was sure also that Mr. Foster, as a member of the House of Commons, would watch the interests of the Institution and horticulture generally.

The Chairman, in responding, said that he should never forget the Institution, and intended to become a life member.

Mr. Nutting proposed "The Secretary," to which Mr. G. J. Ingram briefly responded.

With the aid of a selection of music all present spent a most enjoyable evening.

#### THE WEATHER AND THE BIRDS.

THERE are certainly not a few birds that we outdoor gardeners wish further. We have sent the sparrow to Australia, unfortunately without losing him altogether, and there are some other birds which those of us who pride ourselves on the size of our Strawberries, or the lusciousness of some of our other fruits, would probably rejoice to hear were exterminated. The rigours of a winter such as we have been enjoying (?) no doubt end the lives of hundreds, but the summer sees the generality of these feathered bipeds as numerous and active as ever, and many of us vowing vengeance on them. But in such a winter their miserable puffed out condition, the melancholy, woe-begone appearance they assume touches most of us, and we put off the execution of our murderous thoughts. Generally, too, the Press, urged on by correspondents, pleads their cause, and "Remember the poor birds" forms the text for long dissertations. In this world we must take the evil with the good, and recognising that many birds are most useful to us gardeners, we feed our friends and let our enemies share the spoils.

Personally until this winter the time to watch the vagaries of the feathered race has been denied to me, but now I have been conveniently placed and could devote a little leisure to that watching, which has proved most interesting, so much so that I promise amusement to those who choose to keep an eye on them.

Firstly I must say that I am now well situated. My windows reach to the ground and open on to a large stone step, and so down to the garden. The few crumbs from the breakfast table have been regularly thrown out here, but during this awful, and I do not use the word in its slang meaning, in this awful weather, they have been liberally supplied, and very rapidly the viands disappeared. Have they any means of communication? and if they have do they set us an example of sharing with others the goods provided for them? I cannot answer, but whatever be the cause the numbers of the suppliants increase, so too do the varieties. At first in the warmer times it was only the ubiquitous sparrow, the laziest of all birds as my experience goes, which visited us. The cock robins would take a crumb, thank you, and be off. As the weather became more severe these became regular customers, and the hedge sparrows joined the party. These were followed by two chaffinches, later a third appeared. Then a black-pied water wagtail has turned up. This specimen was evidently suffering and looked pitiable, and I fear has gone over to the majority, for the last day or two it has not joined the group. With the increase of cold a mutton chop bone was put out, and this proved an unfailing source of quarrels, and has been pulled about hither and thither over the lawn. Thrushes and blackbirds ran about the lawn, but if they approached the window it was only occasionally. Then seeing the gusto with which the chop bone had been received we went a step farther. The bones of the beef sirloin were placed some 8 or 10 feet from the window. Stuck up on end they acted as scarecrows for many hours, the birds evidently taking them for a trap of some kind. We then had the bones moved on to the step outside the window, and fully expected the robins would soon attack them; but no, they took the crumbs around it, but avoided the bones. So far as we could make out either the little blue tit or the cole tit were the first to tackle the joint, and the dainty little gems plied their beaks well, returning again and again to the attack. Later a long-tailed tit joined the party. The tits were followed by one of the thrushes. One of these having at last discovered what the bone meant has remained its most constant companion. This bird is a perfect glutton. It may be good for the human stomach to rest a while after food. It does not seem necessary with the thrush, if I may judge from this specimen, but for the interference of a hen blackbird, which seems to be a perfect virago, and to spend her time in driving away any bird that seemed to be at all enjoying life. But for this the thrush might possibly have been frozen to the bone, and on several evenings she seemed to me as if she meant to roost upon it. Certainly she would keep pegging away at the frozen joint, standing on it, lifting it and herself as well long after all the other birds had gone to roost.

The thrush is certainly one of if not the earliest bird, except perhaps the lark, in singing his morning chant; but, judging from our friend here, he is also the latest in going to rest. It is no use preaching to him, or we might tell him that he is "burning the candle at both ends." The blackbird now and then would try the bone, but never in the same way as the thrush. One blackbird would pick a large piece of the soft half frozen sop out of the plate, and with an effort be nearly upset and drop the morsel, which was at once pounced upon by half a dozen sparrows and carried off. Never venturing near the window a pair of wrens are occasionally seen, apparently being busy insect-searching over the bark of the trees.

By far the most cheeky and impudent, and apparently least suffering, are the tits. These were the most fearless; would stand up for themselves, and not be driven off by chaffinch or hedge sparrow—indeed, without being quarrelsome, they appear to me far more plucky than the robins, determined to make the best of matters, and so giving us gardening folk an example of good temper and perseverance under the difficulties that frost and snow bring upon us. The robins now and then stand on the step and warble out their thanks, so the ladies seem to think; but I catch a rather defiant tone in it, and am rather disposed to think that they see a rival; certainly they are the most impudent after our little friends, the tits.

As regards fear of man, the thrush was far and away the least timid; he would continue undisturbed, working away at his beloved bone with our watching him only a yard between us. Next to the thrush the hedge sparrows and robins stood their ground the best. In



the early morning, if all the previous day's food had been disposed of, the smaller birds unceremoniously tapped the window, much to the astonishment of the housemaid, who nevertheless understood the call and supplied the wants.—Y. B. A. Z.



#### HARDY FRUIT GARDEN.

**Pruning Outdoor Vines.**—During favourable weather the first opportunity ought to be taken to prune and regulate the growths of outdoor Vines. This work can often be done when it is impossible to approach fruit trees in the open owing to the state of the ground. Vines on walls are usually situated in warm sheltered positions, and even if the ground around is covered with snow, but the temperature ranges above freezing point, there is little difficulty in carrying out all the necessary details.

**Treatment of the Old Branches.**—No Vine ought to be allowed to retain a large number of old, thick, gnarled branches, as they are useless to produce fine bunches, but invariably give samples of fruit lacking in quality and deficient in flavour. Such branches as these should be cut out, a few every year, young growths being trained to take their place. Where some forethought has not been exercised to encourage suitable young canes for taking the place of old branches it is not advisable to severely thin out the latter, but a start may be made, taking one or two of the oldest and worst placed out first, severing them neatly with a saw near the base of the plant.

**Treatment of Young Canes and Lateral Growth.**—Strong young canes that may be intended to replace old branches must be cut well back if they have grown very long, to firm, bold buds on hard, well-ripened wood. It is only buds of this kind which produce strong growth, an essential when extension is needed, as well as for securing serviceable bunches of fruit. The lateral shoots on older canes and branches ought in most cases to be pruned back to a few good buds at their base. If suitable buds, however, are not situated low enough they must be selected at longer distances at the risk of causing the formation of long spurs. This can be partly avoided by retaining the growth from a lower bud in addition, cutting off any fruit bunches that show on it, but encouraging it to grow strongly and produce large leaves. Bold buds will thus be built up at shorter distances from the main stem, the shoots being shortened at the next winter's pruning to them.

**Cleansing the Rods.**—It is not generally the case that outdoor Vines are much troubled with insects, especially if well managed. But, of course, through neglect and inferior cultivation they are liable to attacks of red spider, thrips, and mealy bug—the same as Vines under glass. If any signs of insect infestations are apparent, the whole surfaces of the Vines should be thoroughly well washed with soft soap, 4 ozs. to the gallon, dissolved in boiling water. In bad cases they may have this preliminary washing first, then receive a dressing with the soap solution, to which a wineglassful of petroleum has been thoroughly worked-in, applying it to the wood with a brush, with which every crevice in the bark may be penetrated. All loose bark should be removed previous to dressing the Vines.

**Cobs and Filberts.**—A plantation of Nuts is a welcome addition to the hardy fruit garden, and if trees are not planted between standard Apples and Pears a piece of ground might be set apart for them. They enjoy liberal treatment, and pay for it by producing good crops. Like the majority of fruit trees, the chief essential in their cultivation is a sufficiency of light and air to every part of the trees. This can only be accomplished by planting trees in the first instance wide enough apart, from 9 to 12 feet being a good distance.

**Planting.**—The soil must be well prepared by deep digging and manuring as soon in the winter as possible. Strong suckers are the best for planting, as from these bushes can be readily trained into the desired shape. Planting may be done in dry weather in February or March. Choose suckers with a single stem possessing a number of fibrous roots, which will hasten the establishment of the plants.

**Trained Bushes.**—Whatever mode of growth is ultimately encouraged it is imperative that a start be made by cutting back the tall sucker stem to within 15 inches of the ground. The shoots which start from this shortened single stem may be reduced to three of the strongest. These, again, must be shortened back the following winter to within a few inches of the main stem. From the next breaks sufficient shoots must be selected to form the bush, each shoot being trained outwards at equal distances apart, the whole of them forming a circle with a clear centre. While the process of shaping the trees is going on the leading growths are each year reduced to about a foot in length at the winter pruning until a height of 6 feet is reached, no further extension being then allowed for medium-sized bushes. At each winter pruning the current year's shoots or side growths are shortened back, as well as the old bearing wood, the slender growths or spray which bear the catkins being left alone.

**Unpruned Bushes.**—Larger and more prolific bushes can be produced after the trees have obtained the requisite number of branches by avoiding the annual pruning altogether. The branches, however, must be trained thinly in the first instance, and whenever any disposition to

overcrowding is shown remove the superfluous portions. With every facility for extension and plenty of light and air among the branches a height of 20 feet will be reached by the bushes and half that distance in diameter attained. Such bushes or trees are immensely prolific. They are suitable for some gardens but not all, the dwarfier restricted trees being better adapted where space is limited, also where Nuts are grown between the lines of other fruit trees.

**Varieties.**—Cosford Cob is large and early. The Red and White Filberts are good, and should be included, while the Kentish Cob, one of the best and most prolific, will produce the latest supplies.

**General Pruning.**—Proceed as the weather permits with all pruning of fruit trees in open quarters, as well as pruning, nailing, and cleansing of wall trees, Apples, Pears, Plums, and Cherries needing attention first, Peaches, Nectarines, and Apricots having had the old bearing wood removed, being in no hurry to be closely secured to warm walls. They are, in fact, better a distance away, except during the prevalence of very sharp frosts, when the walls afford protection. Well ripened wood, however, is not easily injured by frost.

**Birds and Fruit Buds.**—In situations where troublesome birds are numerous and attacks on fruit buds expected, dredge a mixture of soot and lime, the latter predominating, over the buds, which will act as a deterrent and do no harm to the buds or trees. Gooseberries usually need most attention, especially if pruning is completed.

#### FRUIT FORCING.

**Peaches and Nectarines.**—*Earliest House.*—Continue the instructions given in our last calendar under this heading as regards setting the fruit, and when that is effected an occasional syringing on fine afternoons will assist the fruit to throw off the remains of the blossoms. Avoid, however, regular and heavy syringings at this stage, as the foliage is tender and evaporation not great. Sufficient moisture will be maintained on dull days by damping the path and border in the morning and afternoon; if syringing is necessary to cleanse the trees of insects at such time, let it be done early in the day, so that the foliage can become dry before night. When the fruits swell and are too thickly placed, remove a few of the smallest and those on the under side of the branches, but do not thin too severely or fitfully, removing a few at a time. Disbudding also must be done cautiously with early forced trees, taking a few of the foreright shoots—upper or lower side of the trellis—first, then proceed in a similar manner with the others, only a few being removed at a time, commencing on the most forward parts. Care must be taken to leave a growth at the base of the present bearing shoot to supply its place another season, and another must be left on a level with or above the fruit to draw the sap to the fruit; the upper shoot having its point pinched off at the third leaf, unless it be necessary for the extension of the trees, when it should be trained in its full length.

If the trees are extending the shoots necessary for their formation must be trained 12 to 15 inches apart. Instead of disbudding extensions—shoots not required for laying-in to form the bearing wood of next—pinch the superfluous shoots at the third leaf, and to one afterwards, then they will form spurs. The bearing shoots on extension-trained trees should be about 15 inches apart, all being given space so that the foliage is fully exposed to light and air, and room for training in a successional shoot another year. Overcrowding is prejudicial to the crop, and does not favour the succeeding one, therefore leave only the shoots essential to the proper furnishing of the trees, and those required to bring the current fruit to perfection and provide for next year's crop. If fermenting materials have been used inside the house, still continue to turn and add fresh but properly sweetened, as rank manure will give out ammonia too powerfully, and the foliage will be injured, and the young fruit may drop.

Evaporation troughs charged with liquid manure are useful not only in preventing the atmosphere becoming too dry in the immediate vicinity of the pipes, but in giving off ammonia. Failing fermenting materials or evaporation troughs, damp the house in the afternoon after the foliage becomes dry with liquid manure, the drainings of stables or cow houses being suitable, not using the liquid too strong; if neat, dilute with six times the bulk of water. Inside borders will need attention for watering, making an examination, and when found necessary afford a thorough supply. Weakly trees may be assisted to swell their fruit in the early stages by a supply of liquid manure, but it must be given to trees having a tendency to exuberance with great care, whilst healthy trees will swell their fruit much better by judicious feeding from the start. Always apply water or liquid manure at or slightly in advance of the temperature of the house.

If aphides appear fumigate moderately on two or three consecutive evenings, but very carefully, as an overdose skeletonises the leaves, and may cause the fruit to fall; or syringe with a solution of softsoap, 2 ozs. to a gallon of water, and half pint of tobacco juice being added, it is good against aphides, red spider, and mildew. The following may also be used:—Steep 4 ozs. quassia chips in a gallon of water overnight, boil a quarter of an hour, and add 4 ozs. of softsoap to it as it cools, stirring and straining. This may be applied to shoots infested with brown aphids with a brush, so as to dislodge the pests; and, adding a gallon of water to the mixture, the trees may be syringed with it, syringing the following day with clear water. Mildew is seldom troublesome in forced houses, because the syringing washes off the spores of the fungus; but if it should appear dust promptly with flowers of sulphur. Ventilate carefully in clear frosty weather, avoiding cold draughts, as these cripple the foliage, and may cause the fruit to fall.

**Trees Started at the New Year.**—When the trees started early in January are swelling their buds and the flowers showing colour, the



night temperature may be advanced to 45° to 50°, and 50° to 55° in the daytime by artificial means, and 60° to 65° from sun heat, ventilating freely above 55°, and leave a little constantly at the top of the house. In cold weather 5° less all round is better for the trees. Cease syringing the trees, but damp the floor occasionally, so as to maintain a genial condition of the atmosphere. If the blossoms are very numerous remove those on the under side or at the back of the trellis by drawing the hand reverse way of the growths.

**Trees to Afford Ripe Fruit Early in July.**—The house containing such varieties as Royal George and Grosse Mignonne must now be closed, syringing the trees occasionally, but only using fire heat to prevent the temperature falling to freezing during the night. If, however, the trees have not been forced before, the heat may be turned on in the morning so as to raise and maintain a temperature of 45° to 50° through the day, above which ventilate freely, not allowing an advance to 65° from sun heat without full ventilation, and at night fire heat should only be used to exclude frost. This will induce gentle activity in the trees, and is better than bringing them on rapidly by a higher temperature. Trees previously forced will start without any stimulus at the usual time.

**Late Houses.**—Notwithstanding the severe weather the buds of the trees in houses with fixed roofs are swelling fast, and must be freely ventilated in bright weather so as to retard them as much as possible, not omitting to water inside borders if they show the least tendency to dryness. Those from which the roof lights have been removed are still quite dormant in the buds, and they adhere firmly to the wood, whilst the trees under fixed roofs and frost excluded for the sake of plants are not only bursting some buds but casting a majority of the blossom buds. The borders of the houses from which the roof lights have been removed have been well moistened through to the drainage, and will not need a supply of water until the fruit is swelling.

**Melons.**—When the seedlings show the second rough leaf they may be planted in the hillocks or ridges, or if that is inconvenient the plants should be transferred to pots a couple of inches larger in diameter, as those cramped at the roots in their early stages seldom make a good growth afterwards. Plants intended for pits and frames should have their points pinched out at the second rough leaf, and may be planted in their fruiting beds as soon as they require more room at the roots. The soil should be had under cover a few days to dry, be chopped moderately small, and turned twice to become thoroughly mixed if other material are used besides turfy loam. That taken 3 inches deep off a pasture rather heavy in texture, cut and stacked in the previous autumn, and containing a fair amount of grit, grows capital Melons. If the loam is rather close add about a sixth of old mortar rubbish, if poor add a fourth of thoroughly decomposed manure, and free from worms, and in any case a pint of soot may be mixed with every bushel of compost. Cleanse the house or pit thoroughly, removing every particle of the old beds, scalding every part of the house with hot water, washing the woodwork with softsoap, hot water, and a brush, the glass, inside and out, with clear water, and limewash the walls. See that the rubble about the hot-water pipes is clear, or if the bottom heat is supplied by hot-water pipes in a chamber see that the surplus water can pass away freely. Make a ridge of soil where the plants are to be put out, about 2 feet wide at the base, and 1 foot wide at top, and 10 to 12 inches deep. When it gets warmed through a plant may be put out in the centre of each light, say 3 feet 6 inches to 4 feet apart if the plants are to be treated on the alternate system, and between these other plants to afford one or two fruit each for an early supply, otherwise allow 30 to 36 inches between the plants. Press the soil firmly around each plant, having the plants and soil moist, so as not to occasion the need of water at planting. If there is reason to apprehend the attacks of slugs draw a circle of quicklime or dry soot round each plant, and place a little moistened bran on slates to attract the pests, and look for them after dark with the lantern. Woodlice will generally hide between two pieces of old boards laid one on the other, so that the insects can just get between, especially if a little oatmeal is placed on the lowest board, and these can be removed in the morning, and the contents scattered before fowls. Crickets and cockroaches sometimes prey on young Melon and Cucumber plants, for which there is, perhaps, nothing better than phosphor paste spread on pieces of bread or slates, but this is a dangerous poison and must be carefully used. When the plants are out in pits a hillcock should be made in the centre of each light by putting in a barrowful of soil, flattening the top, which should be about 9 inches from the glass or not more than 1 foot, the depth of soil in the centre of the hillock being about 10 inches.

**Temperature for Melons.**—Maintain a steady bottom heat of 80° to 85°, or, if from hot-water pipes, 75° to 80°, as when the heat is from fermenting materials it must necessarily be high at the commencement, and the day temperature 70° to 75° by artificial means, advancing 5° to 10° from sun heat, and as much more after closing; the night temperature 65° to 70°.

#### THE FLOWER GARDEN.

**Sowing Tuberous Begonia Seed.**—There are two good reasons why the seed of Tuberous Begonias should be sown early. One is because such very small seed always germinates more surely before the sunshine has gained greatly in power, and the other is that unless the plants are raised early in the year they will not have attained a serviceable size at bedding-out time. Most seedsmen now supply reliable strains of Begonias for bedding out. Those with flowers borne on erect stems are rightly preferred, the drooping varieties being better adapted for vases, window boxes, and hanging baskets. If proper precautions are taken every seed should germinate, a small packet yielding 200

or 300 plants, or perhaps more, and these may be had each 4 inches or more through by the first week in June, making a good show before the summer is far advanced. Prepare pans, in preference to pots, by carefully draining, covering the crocks with moss, on this placing some coarse soil, and finish off with about 2 inches of a very fine mixture of loam, and either leaf soil or peat in equal parts with a little sand added. The soil used ought to be perfectly free of worms and insects generally, even if this necessitates well roasting it over a fire. Make the surface perfectly level and firm, and then well moisten it either by partly immersing in water or else by gentle overhead waterings. This to be done at least six hours prior to sowing the seed. Do not surface over with silver sand, as the latter does not afford the tiny seedlings, newly germinated, any root-hold, and numbers of them perish accordingly. Sow the seed as carefully and thinly as possible, patches of seedlings being liable to damp off wholesale. Hot-beds, unless perfectly free of worms, are bad places, though most often selected, for Begonia raising. An upheaval of any kind or souring of the soil is likely to prove fatal to many seedlings, and the safest and best place for the pans are shelves suspended, not far from the glass, in a forcing house or plant stove. Cover them closely with squares of glass, and the latter with a good thickness of moss or brown paper. Also protect the pans from sunshine. Never once must the soil in the pans be allowed to become dry, nor should they be watered through a can. A short period of dryness would prove fatal to the sprouting seeds, and however gently water may be applied from overhead, the chances are this would have the effect of dislodging and spoiling many of the seeds or tiny seedlings. Whenever the soil is approaching dryness immerse the pans in a bucket or tank of tepid water just deep enough for the moisture to soak upwards without at the time actually reaching the surface. The seeds may germinate in a fortnight or so, the time being largely determined by its age, and directly the tiny seed leaves are detected admit light gradually, and also slightly block up the glasses, taking good care though that no sunshine shall reach the Begonias. By way of a preventive of damping either wipe or turn the glasses every morning. The seedlings will require to be pricked out long before they are large enough to be picked up with the finger and thumb.

**Dwarf Lobelias.**—When a good strain is procured seedlings of these are as compact, floriferous, and true to name as are cutting-raised plants of named varieties. The seed should be sown early, and much as advised in the case of Tuberous Begonias, and then there will be less likelihood of failure than there would be if sown a month or six weeks later on. If the seedlings are duly pricked out and grown on without receiving a severe check extra strong stocky plants will be ready for bedding out late in May.

#### PLANT HOUSES.

**Allamandas.**—Where a temperature of 65° can be maintained plants that have enjoyed seven or eight weeks' rest may be started into growth. If grown in pots turn them out and reduce the old balls by at least one-third. If very dry soak the plants in tepid water, and allow them to drain thoroughly before potting. Drain the pots well, and use for a compost good fibry loam, one-seventh of decayed manure, and a little sand if the loam is heavy. Press the soil firmly into the pots. The plants should be syringed once or twice daily. Very little water, if any, will be needed at their roots before they break into growth. Plants that are planted out may have a good portion of the surface soil removed and replaced with rich compost, one-third of manure instead of one-seventh may be added. Young plants grown from cuttings last year need not be unduly rested, and if the wood has been well ripened shorten back the shoots, say to 1 yard each, and if the plants were early induced to make two they may, after placing them in larger pots, be laid horizontally at the eave of the house, when they will break from nearly every eye and cover a good space of roof this year.

**Ixoras.**—Cut back the points of the shoots of plants that have been rested if necessary. It is a good plan to shorten back the whole, then they break evenly, and the majority of the trusses expand at one time. Before placing these in a temperature of 65° to 70° see that they are free from thrip and mealy bug. If the former exists wash the plants over a tank thoroughly with a solution of tobacco water; if the latter, syringe them with petroleum, 1 oz. to the gallon. If possible give these plants gentle bottom heat, they will then start much more freely into growth. Do not over-water or syringe them. Once they have broken into growth and the roots are fairly active, repot any that need more root room. In repotting do not disturb the old ball further than is necessary to remove the drainage. Use a compost of good peat and sand, or equal parts of loam and peat. After potting the most careful watering is needed. Ixoras in small pots should be grown on a much larger scale for purposes of decoration.

**Stephanotis floribunda.**—Plants that had their wood well ripened in a temperature of 55°, and have since been kept moderately dry at their roots, will soon start into growth if introduced with Allamandas or Ixoras. Before doing so, however, wash the plants thoroughly with a solution of petroleum and water to remove any trace of bug that may remain upon them. Green unripe ends may be removed, and the plants if grown in pots should be top-dressed with decayed manure. These plants do well for several years in the same pots if they are liberally fed during the season of growth. A little artificial manure should be applied to the surface once a fortnight. Be careful not to give too much water at their roots at first, for after having been kept dry they are liable to decay. Syringe the foliage once or twice daily according to the state of the weather.



# THE BEE-KEEPER.

## APIARIAN NOTES.

### KNOWLEDGE ON BEES.

It does not follow that the person with most knowledge on bees and their habits is always the most successful in securing the most and the best honey. On the contrary, it sometimes happens that things are reversed, and the novice, through favouring local circumstances, has the best of it. The experienced bee-master will, however, as a rule, far outstrip the inexperienced one. Although it is not entirely essential for bee-keepers to know all about the natural history of the bee, it is desirable for them and naturalists to know as much as possible. In order to assist both in the study, I will explain several things on which there is a wide divergence of opinion.

### EGG TRANSFERENCE AND DEPOSITION.

It has been frequently asserted that bees transfer eggs to queen and other cells, and that the queen regnant deposits eggs in partly made queen cells. In hundreds of examinations and experiments I never found either. This past summer, in order to test the matter more thoroughly, I made many crucial tests, but not in one single instance did I detect an egg transferred to any cell from where the queen deposited them. I have witnessed very often eggs deposited in partly built queen cells, but in every instance these were eggs from fertile workers, or unfertilised ones deposited by the queen regnant, inasmuch as they always developed into drones.

Were we to believe the theory that bees transfer eggs to queen cells or that queens deposit them there, then, on the other hand, we should be compelled to believe that bees had various ways of accomplishing their ends. When a hive is deprived of its queen the bees raise queens upon worker cells containing eggs or larvæ only, whether there be queen cells or not. I have never observed an egg transferred. I raised thousands of queens during the past summer 5 inches above the brood nest, and there never was an egg removed to it.

Notwithstanding all that has been asserted to the contrary, the student may dismiss from his mind the wild idea that bees either transfer eggs or that queens deposit them in queen cells. If there has ever been a reliable case it is exceptional, and but proves the rule, that the queen deposits the eggs where they are to hatch and be nursed into perfect insects, whether they be queen, worker, or drone.

### A BEE-KILLING QUEEN.

In 1863 an imported Italian queen was introduced to a hive of common bees, which she attacked and killed over a thousand of them, and since then we have had others with a similar spirit. Such refractory queens are, I believe, the direct cause of their own death, and it is that fighting spirit in both bees and queens that we have to guard against and get rid of before we can depend upon a successful union. Our safety queening cage enables us to discern at a glance when it is safe to let them remain together.—A LANARKSHIRE BEE-KEEPER.

### FENNEL AND BEES.

FOR two or three years past I have noticed in a neighbouring garden where several plants of Fennel flower and seed every year, that a number of bees are invariably at work amongst the flowers, presumably for the pollen for the cell formation in their hives. I am not a bee-keeper, so am not at all learned in bee lore, and it may be a well-known fact that Fennel is cultivated by bee-keepers; at all events I mention the circumstance as one coming under my notice, and there was no mistake about the bees being very partial to these raids upon the flowers of the herb Fennel.—W. D.

### THE LANARKSHIRE HIVE.

I HAVE tried this hive, and find all that is claimed for it by our friend "A. L. B. K." is quite true. Although a large hive it is by no means clumsy, but is light and portable; the ventilating floor I consider is perfect in every way. Those who move their bees to the Heather or Clover districts could not do better than adopt this hive. Some time ago three members of the Goole Bee-keepers' Association paid me a visit, and they were so pleased with the Lanarkshire hive that they have decided to use it, so the standard hive and it will be tested side by side next season. My best comb honey in sections last season, and for which I obtained two first prizes, were taken from the Lanarkshire hives.

### SOILED HONEYCOMB.

I have come to the conclusion if we want honeycomb of spotless whiteness we must follow the advice which for many years

has been given in the pages of this Journal by "A. L. B. K." We modern bee-keepers make a great mistake in opening all the crown of the hive when the supers are put on, and we have in consequence discoloured honeycomb. This might be prevented by admitting the bees by the sides of the hive only.

### THE SEASON OF 1892.

The past season was disappointing to many bee-keepers. In this district (Howden) very little honey has been gathered; in some cases the in-gathering will not tide the bees over the winter, and feeding had to be done to keep them alive. But personally I do not grumble; most of my hives did not swarm, and being strong in bees I got a good supply. Non-swarving hives with me have done the best, in some cases giving plenty of stores to last till the spring, while swarms and stocks that swarmed had to be fed. Strong hives pay the best.—A HOWDENSHERE BEE-KEEPER.

### TRADE CATALOGUES RECEIVED.

T. S. Ware, Hale Farm Nurseries, Tottenham.—*Flower and Vegetable Seeds, Begonias, Lilies and Miscellaneous Bulbs, Chrysanthemums, and Dahlias.*

Popes & Sons, King's Norton, Birmingham.—*Seed Catalogue.*

C. R. Shilling, Winchfield, Hants.—*Vegetable and Flower Seeds.*

W. Bull, King's Road, Chelsea, S.W.—*Flower and Vegetable Seeds.*

W. Drummond & Sons, Dublin.—*Garden Seeds.*

W. Piercy, 89, Beadnell Road, Forest Hill, S.E.—*Early and Semi-early Chrysanthemums.*

Fisher, Son, & Sibray, Handsworth Nurseries, Sheffield.—*Kitchen Garden and Flower Seeds.*

W. K. Woodcock, Barkby Road Nurseries, Syston, Leicester.—*Chrysanthemums.*

J. R. Pearson & Sons, Chilwell Nurseries, Nottingham.—*Garden Seeds, Sundries, &c.*

Peter Henderson & Co., New York, U.S.A.—*Manual of Everything for the Garden.*

F. C. Heinemann.—*Flower and Vegetable Seeds.*

Henry Eckford, Wem, Salop.—*Sweet Peas, Vegetable, and Flower Seeds.*

Cunningham & Wythe, West Mill Street, Glasgow.—*Garden Seeds.*



\* \* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

"The Orchid Review" (T. C).—This new periodical is published by Messrs. West, Newman, & Co., 54, Hatton Garden, London, E.C. As we have already notified, its price is 1s., and it is to be issued monthly.

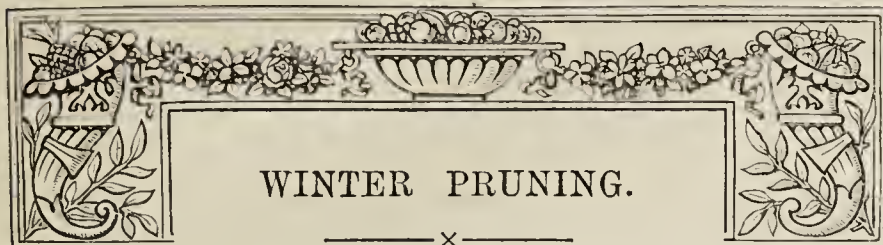
Corrugated Zinc for Plant Stages (York).—It is extensively used for broad flat stages, and covered with gravel or broken shell answers admirably. You can let it slope a little if you wish for carrying off superfluous water, and level the surface with gravel for the pots to stand on.

Double Primula (W. J.).—The spike is decidedly more robust in character than those of the old double white usually are and the flowers tinted. We can quite understand its being regarded as a useful variety, but as you have no idea how it came into your possession we can scarcely be expected to solve the problem. The Apples cannot be named this week if at all, but they shall be carefully examined.

Lily of the Valley (A. B.).—If the crowns have been exposed to frost they will start freely into growth. If wanted as sharp as possible they should be plunged in brisk bottom heat, covering the crowns from light by the aid of cocoa-nut fibre refuse, say one inch below the surface, of the bed and allow them to grow through. As you have not the convenience of bottom heat plunge the crowns into boxes and stand them on the hot-water pipes.

Forcing Lilacs (F. D.).—These will come forward if placed in brisk heat, especially if the plants have been exposed to the frosts we have





ALTHOUGH much of the pruning which was formerly done in the winter is now performed during the summer and autumn months, still there is a considerable amount which must from necessity rather than choice be carried out in winter. The admirable instructions given in the *Journal of Horticulture* as to the importance of thinning out the branches of Apples, Pears, and Plums while the leaves were yet on them has no doubt been acted upon by large numbers of readers. Many others who would if possible have followed the same course were compelled to let the work stand over for a time on account of still more pressing matters. With labour kept down to a very low point, as it now is in many gardens, some things must perforce be put off at certain seasons, so as to equalise the labour throughout the year as much as possible. This is especially the case where arrears of pruning have accumulated. Where numbers of large trees present a thicket of growth it is not always practicable to get the whole of the work of thinning done at one time. When, however, a proper system is once established and persevered in, there is some prospect of being able in the future to carry out the work at the most suitable time. Strenuous efforts should, however, be made to give young trees timely attention, so that they may not be permanently injured by early neglect.

Those who have fruit trees of bush, standard, or pyramidal form should lose no time in giving them the necessary thinning, taking as much as possible advantage of comparatively mild weather, for not only is the work performed with greater expedition then, but the cuts made heal much quicker than they do when sharp frosts prevail. Many old orchard trees to be dealt with present a perfect network of branches, and the pruning in such cases requires to be done with great care, otherwise the prospect for next year's crop will not be promising. Trees which answer to the above description should not in one season be thinned too severely, for it must be borne in mind that when left to themselves such trees bear fruit only on the outside, and if the branches were at once thinned severely enough to leave them as far apart as those on trees well managed from the first, there would be an unnecessary waste of the good fruiting wood already made without a corresponding advantage being obtained in the shape of young growth, which takes time to bring to a fruitful state.

All dead branches, and those which show signs of being stunted, should first be cut out; next remove such cross shoots as can readily be dispensed with, but as it often happens that some cross shoots have thoroughly good wood well studded with blossom buds care should be taken to leave such shoots, even though they are not altogether well placed, till younger and better placed examples have been obtained. Trees may in this way be gradually thinned and brought to a satisfactory condition without sacrificing the greater part of one season's crop. I have seen trees the branches of which were so severely thinned at one time that there was no prospect of obtaining anything like a fair crop of fruit from them for a couple of seasons. Moderation seems to me to be the best in all things, and when Nature has been allowed to follow her own course for years Art should step in and gently guide her, instead of attempting to reverse at one stroke the order of her ways.

Bush and pyramid Apples and Pears in gardens generally are, as far as my observations go, much more productive than they

were when I began my gardening career. I can call to mind numbers which always presented a neat trim appearance; but never carried a good crop of fruit. The use of dwarfing stocks and the practice of root-pruning, where the space devoted to trees is limited, have doubtless done much to bring about this change. But the practice of thinning the shoots freely and shortening but little, after the foundation of the tree has been laid, has, I think, produced the most marked change of all. Numerous instances have come under my notice in which trees, even large standards, had for years been spurred back on the espalier principle with very unsatisfactory results, have by allowing the growths to go unshortened been changed from barren, useless stumps to vigorous fruitful trees. I think even now there is a general tendency to err on the side of crowding. Many who now practise the right system on the young trees which are growing into fruitfulness would do well to keep the branches still thinner.

Apple and Pear trees trained as cordons, or fan-shaped, will require but little attention now if the summer pruning has been well attended to. Side shoots which were then stopped at five or six leaves should now be shortened back two or three eyes, the weaker ones being of course cut back the closest. Young trees which have still a considerable amount of room for extension, if they have already formed the requisite number of branches, should not be shortened back except in the case of unripened wood or weak shoots; the latter should in most instances be cut back to a good bud, and the former to where the wood is well ripened. If, however, the main branches are disposed 15 inches apart there is but little likelihood of unripe wood being produced. Plums show a great tendency to develop a number of short jointed shoots from 3 to 6 inches in length. I make a practice of leaving some of the most promising of these their full length, and after they have fruited cut them back close to the main stem, this being done as soon as the fruit is gathered.

Perhaps the most difficult type of wall trees to deal satisfactorily with are old examples of either Apples, Pears, or Plums, which, through having been constantly spurred back closely year after year, have become a mass of unsightly spurs. Quite half of these may, in the majority of instances, be cut clean away, and those left shortened back to healthy buds. Old Pear trees which have been confined within the same space for years may be greatly invigorated by shortening back the main branches 2 or 3 feet, and filling the space as soon as practicable with young shoots.

In dealing with Apricots the aim should be to have the whole of the wall space covered with shoots and spurs 6 inches apart. After the space is once covered the winter pruning consists only of cutting out enfeebled spurs and shortening back summer-pinched shoots. I have formed the opinion that if Apricots were treated on lines similar to Peaches we should hear less of branches dying wholesale, and in the future I intend to act upon that belief by laying in young shoots all over the tree in summer time, and instead of cutting out these shoots each year, as in the case of Peaches, allow them to remain two years to form fruiting spurs; then after the fruit is gathered remove a sufficient number to keep those left 6 inches apart.

Morello Cherries should have the bearing wood left as near as possible 6 inches apart all over the tree. Any shoots which have grown to within a few inches of a branch above them ought to be shortened to the next break. There is generally a tendency to overcrowd the shoots of this useful fruit; the long, thin growths produced lend themselves so admirably to mathematical training that it is not easy to resist the temptation to leave an extra shoot here and there for the sake of present effect, when it can be clearly seen the summer growth must in consequence become crowded.

Where bush fruits are not already pruned no time should be lost in doing them. Black Currants simply require the young shoots to be left from 6 to 9 inches apart all over the tree, giving



preference to moderately strong, short-jointed ones. Where the bushes are becoming too tall, remove some of the longer branches by cutting them back to young shoots near the base of the bush.

Red Currants, on the other hand, ought to have the side shoots closely spurred in, allowing the extremities of the branches to extend about 6 inches each year till the required height is reached, when they may be cut back to one joint. Where gaps occur through the removal of old or dead branches young shoots may be left a foot in length to fill the vacancy.

It is a good plan to leave the pruning of Gooseberry bushes till all other bush fruits have been done on account of the great havoc birds play among the buds. The best method to follow is to thin out the young shoots to about 6 inches apart, those which are removed being cut back to one eye. No shortening of young shoots will be required except in the case of those likely to be brought to the ground with the weight of fruit. It is also an excellent practice to leave the centre of the tree rather open. Extra fine fruits are produced by training a few trees to wires or fences and spurring the branches in closely. This, however, is not the best method to adopt for general purposes; but those who carry out this system well are justly proud of the fine results achieved.—D. W.

### BRUSSELS SPROUTS AND THEIR CULTURE.

THIS vegetable is probably the most useful of any of the other forms of culinary produce obtained from the Brassica family during the winter and early spring. It is true that where the climate is favourable Broccoli may often supersede some of the more commonplace vegetables, which I have found to be the case even in northern districts, when an unusually mild winter effected a general improvement in the ordinary routine of kitchen supply. Among winter greens during a semi-arctic period, however, with which many vegetable growers are not unfamiliar, I consider an adequate supply of moderate sized firm Sprouts to be the gardener's sheet anchor. I have known instances in which Brussels Sprouts were regarded with some indifference, coupled with a suggestion from headquarters that a smaller plantation of them might suffice for the following season. Young and inexperienced practitioners should not, however, attach undue weight to suggestions of that kind, otherwise some rigorous period in early spring, when a supply of this sometimes rejected vegetable would be eagerly accepted, may lead them to discover their mistake.

Referring briefly to the cultivation of Brussels Sprouts, I have picked fair crops of useful produce from spring sown plants raised on the open borders. These, however, were seldom so early, firm, and abundant as others from seed sown early in February under glass, then pricked off, and grown under the influence of plenty of light and air. When the seedlings are pricked out in frames the sashes should be removed on every favourable opportunity as soon as free growth is apparent, as the object of the grower should be to secure a stock of thoroughly hardy plants by the time they are ready for their places in the open quarters early in May. If for convenience they are started in boxes placed in other cool structures we afterwards turn them out to the foot of a wall or some place of shelter, where they can be afforded additional protection if necessary, and made secure from possible injury of any description by adjusting wire netting over them. Whilst thus located the plants must be regularly attended to as regards watering, and in order to prevent them being drawn up weakly, no more covering should be used than is absolutely needful to save them from the check which would result from an occasional hard frost.

Firm land is generally admitted to be more than half the secret of the success realised in the raising of fine crops of weather-proof Brussels Sprouts. While admitting this in principle I do not know that turning out the plants on ground that may not have been moved with a spade or prong for one or more years is the only method by which the proper conditions towards attaining successful results can be secured as far as soil texture is concerned. I have found that whether manure was applied or not, that a light digging of the square selected for planting out the seedlings very much facilitates the operations of weeding or hoeing afterwards and the treading of the ground, consequent on the performance of such work, ensures the necessary solidity by the time the plants are more than half developed. Speaking from personal experience the crops produced by the light digging system on loam of medium texture have been at least equally hardy and prolific as when planted on solid land.

For those who may not have the convenience for raising seedlings

under glass autumn sown plants can be obtained from market men, but according to my experience of a trial or two of these a considerable percentage of them proved "bolters." When such plants are procured let it be as early in spring as they can be had, and when they come to hand prick them out in a cold frame, or on a bed in the open border over which some contrivance can be fixed to which temporary protection may be adjusted if necessary. Soon after the plants have taken to the soil the "bolters" will show themselves, when they can be removed before the final transplanting is begun. It may not be superfluous to add the reminder, that it is indispensable to the best results in Brussels Sprout culture that the plants at all stages of their growth should have sufficient space for perfect development. Let them once be overcrowded and failure, or at least partial failure, must result from the check thus produced. Among other varieties I have grown within the last few years have been President Carnot and Craig's Favourite, the latter being of Scotch origin. Both are comparatively new sorts, and they appear to be very hardy and good croppers.—BRASSICA.

### MEALY BUG ON VINES.

WHERE vineries are largely used as plant houses during the winter mealy bug is frequently introduced, and unless very great pains are taken in getting rid of the insects the worry and annoyance is of a very pronounced character. Some gardeners are of opinion that once mealy bug is well established, in an old vinery especially, it is next to impossible to get rid of it again. With this dictum, however, I cannot agree. One of the vineries under my charge is probably among the oldest in the country, some of the Vines being also very old, their exact age being known to nobody I have yet spoken to about them. Twice have mealy bugs been introduced to these Vines, and twice have they been mastered. Some of my readers will be of opinion that I ought not to have been so remiss as to allow mealy bug to regain a foothold in a vinery when once eradicated, but when more pot plants are grown than there is good room for, and more work attempted than there is enough hands to properly meet them, something or somebody must suffer.

There are many and various ways of transmitting mealy bug to Vines, but I only know of one that can be relied upon to get rid of it again, and that is a thorough scrubbing of the woodwork, glass, walls, stages, and in particular the rods with hot water. It must be thorough, every crack and crevice being found out by the bristles of a scrubbing-brush, and unless this is done subsequent dressings of strong mixtures are of little avail. As a matter of fact I attach still less value to the latter than formerly, and I never wrote or spoke very highly of any other than gas tar mixture for Vine rods. There should be no skinning the rods, and hard scraping about the spurs. Doubtless this severe, most unnatural, though time-honoured custom, does lay bare many lurking places of insect pests, but stripping off the bark has a most injurious effect upon the Vines from which they never recover, unless indeed the rods are gradually replaced by bark-clothed younger ones. By all means roughly cleanse the rods after pruning, but remove the loose bark only, notably the scales about the spurs. Labourers should not be trusted to clean, scrub, and dress Vine rods, this important work being superintended and largely performed by those who take a more intelligent interest in their work or duties. Hot water with just enough softsoap dissolved in it to make it more penetrating and free working is an excellent insecticide. By hot water I do not mean a bucketful hot when first the work of scrubbing commences, and which quickly becomes cool, but it should be heated to not less than 130°, and kept at or near that during the whole time it is in use, frequent additions being made. It must be a very difficult crevice to get at that will protect mealy bug or other insects from a scrubbing-brush in good hands, though where these pests are well established it pays to give the rods a second good scrubbing.

As a further precaution it is advisable to also dress the rods with a mixture of clayey water, to every quart of which a half pint of cold gas tar is added. I have used much more tar than this to the quart of clayey water without apparently injuring the Vines in any way, but the experience of others does not always agree with mine, and the lesser quantity is recommended in order that no risks should be run, the more so that I attach less importance, as before stated, to any dressing. The clay-tar mixture should be kept well stirred, and of the consistency of thin paint when applied with rather stiff brushes. Avoid smothering the buds, or even surrounding them closely, with the mixture; tar recklessly used sometimes having the effect of injuring the young shoots, making them very brittle, and easy to snap off. Every crack and crevice ought to be well filled or cased over with the mixture, and against the latter what few insects escape the scrubbing brush will make little or no headway.



So very hard to get rid of are mealy bugs that there is almost certain to be a few survivals of the scrubbing and painting processes, and in order to quite clear the Vines of them a close look out must be kept during the growing season for any that do put in an appearance. Unless these few odd insects are destroyed before they have time to deposit eggs in the bark there will soon be a return of the old order of things, as they increase and spread very rapidly in the genial surrounding of a vinery. Next to the hot water scrubbing this hunting out the survivals is of the greatest importance, neglecting to follow it up being the most frequent cause of failure to wholly get rid of mealy bug from a vinery, —W. I.

## ONIONS.

BEING one of those selected to assist in judging the very remarkable display of what Mr. Deverill calls his pedigree stocks at his annual Show in September last, and as the season is now approaching when those who require such for exhibition purposes will be sowing the seed, it may not be out of place to say a little on the merits of these popular kinds.

There are four distinct Globe types, the largest and handsomest being Ailsa Craig. Twelve bulbs shown on this occasion scaled 26 lbs., but they were not so highly finished as usual, but certainly beautifully shaped bulbs. Cocanut is a very large handsome shaped Onion, as is also Advancer, and I should not be surprised to see them to the front on some future occasion, their quality being so good. Improved Wroxtton is highly adapted for the general crop, being an excellent keeper; in fact, it keeps sound until June. I consider this Onion is invaluable for market work.

Then comes the section for large flat types, which comprise Anglo-Spanish, twelve bulbs of which were shown in fine form; weight 22 lbs., circumference 18 and 19 inches; and being so well finished were awarded the gold medal as the best dozen bulbs in the Show. This variety is the gem of this section, and those who want the true stock should ask for the latest development or Mr. Deverill's selection.

Then follows Lord Keeper with deeper flesh and runs Anglo-Spanish very close. This variety is higher in the shoulder but is not so solid in appearance. Royal Jubilee and Rousham Park Hero are wonderfully fine strains, and are at all times likely to hold their own, for I have seen the latter shown more than once when the dozen bulbs averaged 18 inches in circumference. The original Excelsior is a beautiful Onion and was shown in splendid form, but had no chance against the larger varieties named. I see by Mr. Deverill's catalogue he is offering prizes for Scotland, as he considers the northerners cannot compete with the southern growers.—G. A. J.

## PRICES OF APPLES—MANURE.

I THINK "A Yorkshireman" and "A Sussex Grower" (page 6) have overlooked the fact that the discussion of prices was not that of Apples generally, but of Domino Apples, and it was as regards this I thought sufficient time had been taken up. Still, your correspondents may congratulate themselves on having obtained very good prices. Doubtless among so many Apple growers as there are there will be some who obtain prices considerably over the average. Your correspondents may have had special opportunities for the disposal of produce in small towns locally. Here, in the midst of a large fruit growing district, we cannot get such good prices from shopkeepers in the neighbouring town as in the market, because they obtain the bulk of their fruit from cottagers, who, only having a tree or two, have not enough to send to a distance; they therefore sell it in Maidstone for what it will fetch, and usually the shops are glutted with cheap fruit. We are consequently shut up to London and more distant markets, and if I send to Yorkshire my return would be very different to that of "A Yorkshireman," because of the extra carriage, though perhaps in other ways our more southern climate would be an advantage.

Sometimes we can dispose of fruit very well to higglers, who take it to the seaside towns; but this cannot be relied upon for disposing of a large quantity. The average return home to us from London and the chief Lancashire and Yorkshire towns and elsewhere for Warner's King and other large cooking Apples was considerably less than the prices quoted by the two correspondents named above. At the end of August I sent up to Covent Garden some selected cooking Apples—that is, the

largest grade of large growing sorts—and they realised 6s. a bushel. On receiving a telegram as to the price they produced I sent off a large consignment of the same sort, but they only made 4s. a bushel on the following day. Five days later they made only 3s. 3d. per bushel, when I left off sending there. The fruit was not topped, and my mark is well known; there was only the vicissitudes of the market to account for it. But these contingencies we always have to face, and it is rarely that all can be sold at the top price. The cholera scare much reduced the price of Apples in London.

I may inform "W. P. W." that the statements I have made about manures were facts, and no amount of writing on the part of anyone who has merely a superficial knowledge of commercial fruit growing can dispose of them. I do not feel disposed to give your correspondent the details he requires about manures, as he appears to ask in a spirit that suggests a desire to find fault. In such a case discussion is of no benefit. I am glad to learn from anyone, but dislike mere wordy controversy. But for the sake of proving the reasonableness of my statement about manure I may say that those of your readers who live in this neighbourhood will readily believe it, for although the precise applications I give are not known to them, yet my carts are as well



FIG. 10.—CYPRIPEDIUM GERMINYANUM. (See page 74).

known as I am myself, and it is evident in manure alone that I have a large expenditure.

If "W. P. W." is not acquainted with the applications of manures by market gardeners and fruit growers who farm well, he has only to turn up back numbers of the *Journal* to gain information, such as 26th October and 2nd November, 1871. He should know that applications of 50 to 100 tons of manure per acre are not uncommon, and he will see from the articles I have named that the outlay for this alone in one place mentioned "generally exceeds £20 per acre," and a garden in Bermondsey sometimes has an application of manure value between £30 and £40 per acre. In the Bedfordshire district it is stated that for Onions "50 tons of dung per acre are sometimes applied, costing 8s. per ton at the railway and 10s. when spread in the field." After this my statement, which included cost of cartage and labour, reads as a very moderate one, and it is true I do not apply nearly as large quantities as the above. I consider a shovelful to each Gooseberry bush, and some for the crops in the spaces between, with a little extra for standards, supplemented by any particular artificial that may be necessary, a very good dressing; yet it does not look very much on the ground, but it works out to a large quantity per acre. I may be told that I can use artificial manures alone, but I found they worked out by analysis about the same price as dung, while more care has to be exercised in the application of heavy dressings. Besides this, stable manure supplies humus and holds moisture in dry weather, facts which are not considered by those who go in merely for analysis, but which make a considerable difference to the crops.

Several different crops, one overlapping the other and trees rising to some height above the ground, take a large amount of moisture from the soil. It is very obvious, for instance, that Apple trees 20 feet high are capable of bearing a great deal more fruit and exhaust ground much more than a thick plantation of bush Apple trees 6 feet high.



Although the amount of manure I use is considerably less than the examples I have quoted above, yet it astonishes many who do not use much of it. They are equally astonished at the amount of produce which comes from my ground. One thing I have found out by experience, and that is that it does not pay to be stingy with manure. I commenced with less—an expenditure of only about £3 per acre, but I find that larger applications pay better. Not only the quantity, but the size and quality of produce have to be considered. I trust that these few remarks may be helpful to your readers.—WALTER KRUSE.

### TUBES FOR HARDY FLOWERS.

I JUST refer to the mention made of my suggestion that the fixing of the size of tubes or holders of bunches of hardy flowers at 2 inches in diameter is in antagonism to that of Mr. Shanks, who favours an inch tube only, to point out how very small an orifice after all is that of an inch tube; indeed it does not exceed two-thirds of the square inch, because round. Half a dozen fair sized stems would fill a 2-inch diameter tube, because that, too, would be round, and not exceed 1½ inch square. I do not think for one moment that a bunch of flowers filling such a tube fairly would be too large, yet I think plenty large enough.

"S. P. H." (page 46) shows how his wordy definition of hardy flowers includes shrubs. Now I think it is the earnest desire of nearly all who appreciate ordinary hardy garden or border flowers, to exclude shrubs; indeed, shrubs being admitted, less conspicuous perennials would have poor chance very often. Of course it is imperative that some check should be put upon the free employment of varieties of the same kind or species. Many exhibit up to twelve bunches, all should be distinct kinds; above that number two varieties of any kind might be admitted, but the great aim of competition of this sort would be to popularise hardy border flowers, and to encourage the cultivation of many of the best. The grower who has fifty distinct kinds is better off than he who has ten kinds only, and five varieties of each, even though at one particular time the latter may make the largest display.—A. D.

### WHAT CONSTITUTES AN AMATEUR?

"OBSERVER," writing on page 44, states that the executive of the National Amateur Gardeners' Association had approached the Royal Horticultural Society in regard to the correct definition of an amateur with satisfactory results. I should like to learn how these satisfactory results are evidenced. It is very well known that the R.H.S.'s definition of an amateur always has been anyone not in the trade, so that gardeners constantly and chiefly competed in what are termed by courtesy amateurs' classes. In the Society's rules and regulations for exhibitors, published for the year, there is not a word that in any way gives a fresh or diverse interpretation, and yet it is an interpretation not accepted by any other society in the kingdom.

The National Rose Society has amateur classes, but it does not recognise gardeners. Practically, the gardener is nobody, and his employer is regarded as the amateur exhibitor. Perhaps the R.H.S. may take the same view, but then it is an absurd one, as in nine cases out of ten the gardener is the real competitor. Now the Auricula and Carnation Societies, whose rules are published in the R.H.S. schedule, have no distinctions; on the other hand, the Pansy Society have a definition, and directly excludes all gardeners, or even gentlemen who employ any other help but a garden labourer. Clearly we do want some national definition of what or who is an amateur, and one universally recognised. Will the Council of the R.H.S. really tackle this matter, and help to the establishment of a recognised definition?—F. R. H. S.

### CANKER IN FRUIT TREES—SOIL CONSTITUENTS.

(Continued from page 48.)

ENOUGH has been said to show that red soils are Apple producers. The stiff loam of Sussex on yellow or blue marly clay, impregnated with iron (over 6 per cent.) grows splendid Claygate Pearmain and Duck's-bill Apples. Cambridgeshire brick earth on a blue clay subsoil only needs two sorts to afford a supply of Apples—namely, Histon Favourite and Marfitt's Seedling. On the light oolitic soils over gravel or sand the latter variety cankers famously; therefore we will turn to the sandy soils.

Surrey.—Soil sandy, subsoil sand with ironstone gravel and a hard pan below; canker, all the Hawthornden race, Cellini, Ribston Pippin. Kent.—Soil thick, light, and sharp loam on ragstone brash; canker. Surrey again.—Peaty soil, subsoil gravel and wet-pan again; canker, Dumelow's Seedling and Ribston Pippin. Kent once more.—Soil light and good, clay subsoil; canker, Cox's Orange Pippin. Berkshire.—Light shallow loam, gravelly subsoil; canker, Lord Suffield, Dumelow's Seedling, and King of the Pippins when the roots get into the subsoil. Middlesex.—Light soil, canker after a wet season. The iron alias the pan, hence Keswick Codlin, Manx's Codlin, and Duchess' Favourite surface rooted are not liable to canker in such soil. In Denbighshire in light soil over gravel Apple trees canker; Pears on free stocks are nowhere finer. In Bedfordshire.—Sandy and deep; Hawthornden (old and new), Irish Peach, Blenheim Pippin, Ribston Pippin, Dumelow's Seedling, and Annie Elizabeth canker. So much for light soils that contain a low per-centage of oxide of iron.

Just a line or two about calcareous soils. Yorkshire.—Calcareous loam on magnesian limestone; canker, Lord Suffield, all the Hawthornden race, Calville, St. Sauvier, Ribston Pippin, Alfriston, Lord Burghley, and Pearson's Plate. Dorset.—Soil light and chalky, subsoil chalk; canker.

Now, in a sandy soil we get, as the result of analysis, a low percentage of oxide of iron, perhaps less than 1 per cent.; but with the other constituents fairly good, as per below:—

*Organic matter and loss on heating	...	...	2.82
Oxide of iron	...	...	0.92
Alumina	...	...	0.88
Lime...	...	...	0.18
Magnesia	...	...	0.12
Potash	...	...	0.07
Soda...	...	...	0.06
Phosphoric acid	...	...	0.10
Sulphuric acid	...	...	0.01
Insoluble silicates and sand	...	...	94.84

100.00

*Containing nitrogen	...	...	0.12
Equal to ammonia...	...	...	0.15

—("Elements of Agriculture," Fream, page 20.)

The soil corresponding to the analysis is not fit for Apples; for this reason—there is not enough alumina to hold anything in the way of manures. But if we apply a dressing of blue clay marl, 100 cartloads per acre, during frost, throwing the lumps evenly on the ground, spread regularly after a thaw, and fork or plough-in, that land is improved 50 per cent. as a manure economiser and for producing Apples. Why? Because the elements of which the sandy soil is deficient are supplied in the clay marl (too stiff as a soil)—namely, oxide of iron 5.77, alumina 5.15, carbonate of lime 19.92, magnesia 0.25, potash 0.62, soda 0.09, phosphoric acid 0.38, sulphuric acid 0.04, soluble silica 13.45 per cent.—clear gains all round of elements essential to plant nutrition.

It is similar with a calcareous soil as sandy; both are deficient of organic and inorganic substances. A clay soil may contain 7.21 per cent. of organic matter, and lose on heating, and a marly soil 10.50, but a sandy soil seldom contains 3.00, or a calcareous (chalk) soil more than that amount. The iron in chalk soil rarely exceeds 1.50 per cent., its alumina 1.75, but it will generally show better percentage of potash and phosphoric acid than a sandy soil. Notwithstanding, the chalk soil is not an Apple-producing staple.

Soils, however, are greatly influenced for production by their mechanical nature. A loose, good calcareous loam, strong enough to grow Wheat, and intermingled freely with flinty particles, may be so deficient in food that Apple trees languish in it. I was particularly struck with the appearance of an orchard the other day on this formation (chalk) in Hertfordshire. It is an ordinary orchard attached to a farm house, about two acres in extent, planted about twenty-five years ago with Apple, Cherry, Pear, and Plum trees, two-thirds with the first, and the remaining three in about equal number occupying the other third. The Apple trees are all wrecks, dying back by feet in the young limbs, and all teeming with swellings and excrescences caused by the canker fungus (*Nectria ditissima*). The Pears are perfectly healthy, Hessele and Aston Town fine specimens; Cherries free from gum, Elton and Bigarreau fine trees; Plums moderate, Victoria best. The orchard is in grass, mown, and not manured, but a portion where the Apples have failed is planted with Gooseberries and Currants, and these are very healthy. Of course, the Apples fail for lack of "management;" if so, why not the Pears and Cherries? A trench was being cut near for laying sewage pipes, and it revealed good soil down to 3 feet or more, when the soil proved heavier and redder as the chalk was approached at about 6 feet depth, which, instead of being white, was quite discoloured and red-rusted. The iron had been washed out of the surface soil and accumulated with the alumina over the chalk, and that became reddish to a thickness of 1 to 3 feet. The Apple trees were famished—they wanted iron or manure that contained it along with other essential and nutrient elements, but the Cherries and Pears sent down their roots and drew up the food essential to their healthy growth and the production of fruit abundantly and profitably.

Let us pass to a heavy cold soil in the same county (Hertfordshire). Analysis by Dr. Voelcker:—

*Organic matter and loss on heating	...	...	5.64
Oxide of iron	...	...	4.39
Alumina	...	...	6.36
Carbonate of lime...	...	...	13.53
Sulphate of lime	...	...	0.22
Magnesia	...	...	0.43
Potash	...	...	0.43
Soda...	...	...	0.25
Phosphoric acid	...	...	0.14
Insoluble silicates and sand	...	...	68.57

100.00

*Containing nitrogen	...	...	0.28
Equal to ammonia	...	...	0.34

As compared with the analysis of Mr. Kruse's soil, that just given shows deficiencies chemically of sulphate of lime, 0.04; magnesia, 0.24



potash, 0.08; and phosphoric acid, 0.10; the two last are the most important to apply to the soil, because they are most abstracted by fruit trees and taken off the ground in fruit, but it is much better in the other most important element to be applied to the soil in the production of fruit, namely, nitrogen 0.11, equal to ammonia 0.13 per cent. Mr. Kruse's soil is mechanically 14.30 better than the Herts soil, that is, in insoluble siliceous matter, much poorer in iron (1.01), alumina 1.91, and carbonate of lime 9.62.

The lesson is this—the Herts soil lacks mechanical texture and chemical constituents—potash and phosphoric acid; the Leeds soil, nitrogenous matter. The Herts soil is suited for Plums, so is the Kent (Mr. Kruse); Apples succeed on Paradise stocks on the Herts soil; Pears on Pear stocks produce pale, sickly foliage, grow freely, and hardly ever canker (note the fact—oxide of iron, 4.39); the leaves blister and drop off, and the fruits refuse to swell, and are spotted and cracked. "Artificials have been tried—none any use." Trees on Quince only live about three years, and then gradually die off. A similar soil to the Herts was made suitable for a general fruit garden by burning a foot of the clay beneath the ameliorated top soil, mixing all together so as to form a staple 2 feet 6 inches deep. This materially improved its texture, sun, air, and rain being able to act more beneficially, whilst the store of potash and phosphoric acid had been opened.

Iron, unless forming a pan or disproportioned, has no predisposing or direct influence in causing canker, and in what direction it may be employed as a curative is merely conjectural. Only a few years ago it was considered the active agent in the production of chlorophyll (the green colouring matter of plants). Hoppe-Leyler, however, found that chlorophyll contained phosphoric acid, and Herr C. Loew proved that iron alone was not sufficient to cause the chlorophyll layer to assume a dark green colour when it was pale and yellowish. Mr. Kruse can prove this, and form an idea of the extent to which iron is likely to assist him in subduing canker. I will on another occasion suggest an experiment or two to Mr. Kruse by which he may possibly obtain an object lesson as to the manures best calculated to assist his culture.—G. ABBEY.

(To be continued.)

## DISCUSSION ON POTATOES.

### POTATOES IN SCOTLAND.

IN writing of Potatoes it is a safe preliminary to remark that they are made or marred according to the soil, or, in other words, varieties have to be selected to suit soils. And yet another remark is required—that is, no vegetable is so much at the mercy of the cook, and along with that, it may be added, that tastes vary so much as to what constitutes quality in Potatoes, that one has always a difficulty in deciding on their merits until a trial is made by oneself.

If a Potato is sufficiently floury a very large proportion of consumers are perfectly content to accept that condition as finally settling the question of good quality. The Ashleaf Kidney, The Don, and the Dunbar Regent furnish examples of Potatoes of the highest table quality. The Champion I should place as the lowest in quality; albeit the Champion is floury to a degree. Up to the present the best varieties I have are these—Early Puritan for earliest, and if need be second early, too; Sutton's Early Regent, though I have no doubt that this sort will be displaced before long, as Myatt's has been by Puritan. For autumn I think Sutton's Seedling is as good as any I have tried, and for later use The Bruce. Sutton's Seedling is, of course, known as a second early, but I find it very good for autumn, and after the experience of another year I think more than ever of it as a good table Potato, combined, as that qualification is, with its abundant cropping qualities. Other kinds that can be recommended are Windsor Castle, Matchless, and Jeannie Deans. The first and last named of the above trio have to be tried again, but I certainly think they may prove standard sorts.

Potatoes when well grown are still a paying crop. It is current that two years ago a Lothian farmer, with the profits from his Potato crop, could have bought the land he cultivates; and during the past season an Ayrshire farmer is said to have done equally well with earlies.—B.

### QUALITY IN POTATOES.

BRAVO, Pat Murphy! But you have to thank a Saxon for supplying what you in your hereditary excitement omitted. "The proof of the pudding is in eating," is a very old proverb, but not less true is "The proof of the Potato is in the cooking." Why did not Pat Murphy (page 34) tell us this? Because he (and naturally too) assumed that even the wilful Saxon always boiled his "taters" in their skins. This poor Saxon does, but alas! he finds himself in a sorry minority. He, however, is in full agreement with Pat as to the quality of the old Regent and Lapstone; but does not the well-known quality of the Regent rather upset "W. T., Blantyre's," axiom (on the page alluded to) that quality means yellow flesh?—EAST ANGLIAN SAXON.

### SOME GOOD VARIETIES.

MY few lines seem to have called forth some very interesting contributions, and perhaps you will allow me to give my experience after growing very many varieties for the last fourteen years. Every new variety I invariably obtained twelve years or fourteen years ago, and I was very fond of exhibiting a collection at the neighbouring shows. In the multitude of varieties there is no wisdom, and I cannot recommend

more than eight or nine varieties to be grown, except in cases where exhibiting is carried on. Too many kinds necessitate much trouble in keeping separate, and occupy so much space that they are not desirable. I have ever found that yellow-fleshed varieties are far away the best for flavour (more meaty, if I may be allowed to use such a word), and I firmly believe more nutritious. There is a great deal in what "Pat Murphy" states. I do not believe the present handsome Potatoes are equal in quality to some of the old, and although I have not even seen a Lapstone for twenty years or more, I have a very lively remembrance of what a splendid quality Potato it was; but it deteriorated in cropping so much—seemed sick of the soil—that I gave it up, and have never seen it since. The round Potatoes I used to get in London eating houses twenty or even fifteen years ago were invariably of good quality, but now one does not get such a good Potato at the very same places.

"A. D.'s" contribution, page 34, is very interesting, giving a description of so many varieties, with most of which I am well acquainted. Laxton's Early Short Top is, I am glad to see, appreciated by "A. D.," but he mistakes the other Potato. It is Sharpe's Victor, not Albert Victor, which I do not consider a desirable variety, whereas Victor is good. Mr. Molyneux and "A. D." both speak highly of Sutton's Ringleader, and I shall be tempted to try it before long. So far I know nothing to beat Laxton's Short Top and Victor for earliest crops. To follow these I have Beds Hero and Sutton's Seedling, which for many years I have ever found trustworthy both on very light and very heavy land. I consider these two are quite sufficient for midseason, but if another must be added it cannot be bettered than by Laxton's Victorious, a heavy cropping kidney of flattish shape, and of first-class quality. Laxton's Reward, Sutton's Satisfaction, and The Bruce are amply sufficient for main crop and I believe cannot be excelled. "A. D.," who, like me, appreciates a good yellow-fleshed Potato, cannot do better than try Reward, for it is the best flavoured Potato I have tried of recent years. I have now selected eight kinds, which will be found amply sufficient for all ordinary purposes, and can be very well shortened. If two coloured Potatoes are desired to help an occasional exhibit or for the table, Vicar of Laleham and King of the Russets are as good as any I have tried. These ten varieties have been selected from, I should say, quite 100 that I have thoroughly tried.

In conclusion, I must state that I have grown Victor on both light and heavy land, Early Laxton on heavy, Beds Hero on heavy, Sutton's Seedling both on heavy and light, as also Victorious and Satisfaction. Reward and The Bruce were grown on heavy soil, with Vicar of Laleham and King of the Russets on light land. These few notes may be some guide to others, and I do not think they will be found in any way misleading.—H. S. EASTY.

### TOO MANY VARIETIES.

THE discussion on Potatoes seems likely to prove quite as interesting as that which has been carried on in the *Journal of Horticulture* with regard to Apples. Mr. Molyneux, on page 36, is, I think, not very far wrong when he says half a dozen varieties are sufficient to supply the wants of a good sized family. Unless required for exhibition purposes a large number of varieties is not attendant with satisfaction at the dinner table, by reason of the varying qualities. The cook, too, has good reason for complaint when so many kinds are grown for home use, because in cooking Potatoes differ materially in the treatment necessary to present them in the best possible form. On light soils there is greater uniformity of quality than on heavy clayey land, as Mr. Molyneux points out, and there is less complaint heard concerning bad flavour and non-floury character of the tubers when they are obtained from light soil than from that of an opposite nature.

On the page alluded to "A. D." names twenty-four sorts, calculated to cover a long season, but for all practical purposes—save that of exhibiting—a fourth part, I consider, would cover quite as long a season, and that, too, with more satisfaction to all concerned. With us Snowdrop is the best second early, and Windsor Castle the favourite main crop, Magnum Bonum continuing an excellent succession till the early Ashleafs are ready.

Out of the many sorts grown in this garden during the past year or two, none proved so good a disease-resister as Sutton's Windsor Castle, nor did any other yield so heavy and uniform a crop, and several "trial" and exhibition sorts will be discarded to give place to this variety. Abundance, Satisfaction, Sutton's Seedling, Nonesuch, and Masterpiece were all grown, but none bore any comparison in the quality or weight of crop with Windsor Castle. With one object only in view, namely, that of supplying a good article that must give all-round satisfaction, where is the need for endless sorts of Potatoes, when two or three will do so much better? For exhibition, of course, variety must be had, but in this, I think, societies would do well to reduce their collections in point of numbers of varieties required.—W. STRUGNELL, *Rood Ashton*.

### SUTTON'S SATISFACTION POTATO.

SO much did this remarkably fine flattish round Potato come to the front in the course of last summer and autumn, that I obtained a few tubers of it from several sources, and found in all cases that it was excellent, cooking admirably, and giving white mealy flesh and very good flavour. It is probably the heaviest cropping variety in cultivation, but it is also a common mistake to grow it on rich garden soil. If gardeners would limit their garden crops to the first early or more refined sorts, that would be comparatively small tubers in the fields, and plant



all their late strong growing large tubercled kinds in field ground, they would have tubers of more even size, better quality, more free from disease, and on the whole far more useful than rich garden soils give. Satisfaction and other of these large tubercled kinds are specially fitted for allotment growth also, because in these the soil is rarely too rich.—A. D.

#### POTATO DISEASE.

I CANNOT accept Dr. J. Böhm's statement (page 49) with respect to the Potato disease as conclusive. I have seen myriads of cases where disease spots have displayed themselves in and immediately beneath the skins of the new tubers where there were no abrasions or injuries by insects of any kind. What is to prevent a *Phytophthora* spore from penetrating into the extremely thin delicate cuticle or skin of newly forming tubers any more than keeping it from penetrating the cuticle or epidermis of the leaf or even stalk? As to where the disease spores hybernate during the resting period I thought Mr. Worthington Smith had long since conclusively shown that they hybernated in the soil.

If Dr. Böhm's theory be correct what becomes of all Dr. Jensen's opinions and theories, which we have so generally accepted because they seemed to be so conclusive and practical? We have never yet, in this country, put his protective earthing experience to a practical test. We never had a better opportunity than was presented last summer owing to the frequent rains, but at last it was shown in numberless instances that the ordinary method of earthing, which is far from being truly protective, did not ward off disease attacks. I should require very strong evidence that the disease spores do not directly affect newly forming tubers. It is evident that there is yet plenty of room for experimenting in relation to the preservation of Potato crops from the disease.—A. D.



#### THE NATIONAL ROSE SOCIETY.

I WAS very pleased to find in Mr. Grahame's interesting letter (page 26) that we are much more in accord than usual; and I hope we may become even more united in our views, though it is generally considered that a certain amount of diversity of opinion with plenty of free criticism is good for any Society, even as the Opposition is a healthy stimulus to Her Majesty's Government.

#### JUDGING.

I do not quite agree with his comments on Mr. Shanks' notes on judging. I think that a small grower *may* be as good a judge as a large grower, or even better, but at the same time I believe that the latter has the greater facilities, and all other things being equal is the more likely of the two to be a good judge. I should have thought this was obvious, that experience was one of the first essentials for a judge, and that the larger amount of blooms a man sees the better would probably be his knowledge of the average standard of a good Rose. If we wanted, say, a judge of boys, we should surely choose a large schoolmaster, other things being equal, in preference to one who had but few pupils. Again, though most little growers cultivate about the same sorts, you occasionally find an uncommon variety even in a small stand, and surely the judge who personally knows the greatest number of varieties must have some advantage. Once more, the small grower who has the most intimate knowledge of the "manners and customs" of the few specimens he has of each variety—perhaps all in one aspect and soil and on the same sort of stock—may chance to find his knowledge too minute and particular, and not general, varied, and broad enough. But still all this does not prove that the large grower is necessarily the best judge—it is the old story of "eyes and no eyes" over again—but I think he certainly has the greater facilities and opportunities of becoming a good judge.

#### DATE OF THE METROPOLITAN SHOW.

On this point I fear we are still as far asunder as we ever have been. For, though it is true that Mr. Pemberton's motion if brought forward again at the next general meeting as a "hardy annual," would, whether won or lost, make no difference to the date for 1894, that seems to me to be the very reason why it *should* be brought forward and discussed, as less likely to injure "good blood" than when it would produce immediate effect. Mr. Grahame having won two closely contested games, suggests that the other side should leave off playing; and it is quite possible (for there is a good deal of human nature in rosarians) that if we had won we might have wished the same, though we might not have been bold enough to propose it.

#### MOSS.

Some time ago a correspondent wrote in trouble about his supply of suitable moss, with an inquiry about the possibility of cultivating it. I could not give him any comfort, but hoped that someone else would, and thus give me a wrinkle as well, but there has been no answer. The

Peterborough grower who used green plush or velvet instead of moss (could it have been thirty miles that he told me was his distance from the nearest place where he could get it?) does not seem to have had many followers, and opinions were divided, I fancy, as to the effect. I did not think it looked bad, though not so good as the real thing; but I have always been chary of expressing an opinion on a friend's or rival's moss since a day some years ago, when I and another amateur showed against each other at an out-of-the-way country show. We were then comparatively novices; but I have now a long way indeed to look up to the height he has since attained. I think he must have been more of a novice then than I was; at all events, I felt called upon to say something when the final moment at length arrived, and he silently placed his twelve beside mine. His moss was lovely, I do not know that I have ever seen better, and it was in all innocence that I said, "What beautiful moss you have got!" His answer was a polite "Thank you," but it was evident that my unfortunate speech was taken as implying that the moss was more worthy of admiration than the Roses, and I was so taken aback as to offer no apology, though I have ever since been wanting to make one.

I confess that when I am judging, the moss in any box must be exceptionally good or exceptionally bad to have even one point's influence in the scale one way or the other. Still, it may have an unconscious effect on the eyes and minds of the judges, and we want to do the best we can for our boxes; so it may be stated that the moss that grows on old roofs, either tiles or thatch, is the most effective if it be laid evenly, and especially if it can be induced to keep its colour. It is odd at the end of two or three weeks' showing how little attention we pay to the moss of which we were so careful at first, and really if it is fairly green and tidy the judge in most cases probably hardly notices it at all. The ordinary moss can only be found, as a rule, of sufficient quantity and quality on a north bank on a clay soil, and much of the roof moss that looks so lovely in a mild winter will be found brown and useless in July. Two or three years ago some old thatch which had moss on it that I had marked as good was pulled down three or four weeks before the first show. I got some of the old thatch just as it was with the moss on it, but though I kept it in the shade, constantly watered, it soon lost its bright colour, and turned so brown and dingy that I had to give it up after all.

The experiences of any exhibitor who has been successful in showing really good moss would, I am sure, be welcomed by others as well as by myself, and if accompanied by some rules for the preservation of the colour of roof moss their value would be increased.—W. R. RAILLEM.

#### PROXY VOTING.

THIS may be all very well in certain cases, but the worst of the practice is that it puts into the hands of executive bodies a power which is invariably employed to the detriment of free and generally healthy criticism. Whilst the country subscriber naturally wishes to be free to vote at general meetings of his special societies he is at a disadvantage, that in the case of any discussion arising he is incapable of voting according to argument, but his judgment has been given irrespective of argument. Those who are beaten at a general meeting once or twice should not be so anxious to invoke the aid of the proxy vote, which is always a two-edged sword; but should peg away, and also work up country subscribers to attend the meetings, and thus carry points by force of numbers as well as try force of argument.—K.

#### THE UNCERTAINTY OF BROCCOLI.

FOR the past year or two this is a question that has been brought under notice in a very prominent manner by the action of the severe winters on the plantations of Broccoli, more particularly in the case of early sorts, or rather those which under favourable circumstances are calculated to "turn in" during January and February. Snow's Broccoli, which is perhaps one of the best for maturing early in the year, when the winter is mild, is rendered valueless in my case by the late frost, which has been severe and protracted. Varieties that can be said to have stood such weather unharmed may be set down as hardy; but the variety above mentioned, I am sorry to say, is one that cannot claim such a distinction, at least not in our case. I have a good breadth of "Snow's" that previous to the last spell of frost gave promise of an excellent yield, but now presents a most pitiable aspect, and I shall not plant this variety on such a large scale in future.

Where convenience exists for lifting and storing the plants in otherwise unoccupied fruit houses or heated pits not too thickly together their progress is carried on easily, and heads that could be produced by such methods would now prove invaluable; but the frost setting in so early and severe gave but little warning or opportunity for storing them uninjured even to many who possess that convenience. A pit, furnished with a flow and return pipe is much better suited for protecting and forwarding Broccoli than houses; the latter, when used as a winter promenade, are rendered very objectionable by the somewhat offensive smell that always arise from such vegetables confined under glass. Unheated pits this winter, without an abundance of protective material, would not be of much service because of the vigorous penetrating powers of the late frost. An ordinary 9-inch brick wall was not nearly enough to resist it penetrating the soil within. To those having protective convenience early Broccoli culture would prove remunerative, but disappointment is sure to be rife among growers who must depend on open air conditions entirely.—W. S.





**THE WEATHER IN LONDON.**—The weather in the metropolis during the past week has been rather mild. Sunday opened wet, and rain fell more or less all day on Monday. Tuesday proved fine, but dull; Wednesday being bright and mild with westerly winds.

— **THE WEATHER IN THE NORTH.**—The week ending the 24th has been one of tolerably good weather for the season. There have been slight frosts on two mornings, and the days, although dull, were mild. High winds, with occasional heavy showers from the west, took place, especially during the night. Snowdrops are beginning to appear. —B. D., *S. Perthshire*.

— **SILVER MEDAL ESSAYS.**—Mr. Harry Corlett, foreman in the gardens of Holbrook Gaskell, Esq., Woolton Wood, is the winner of the medal competed for by members of the Woolton Gardeners' Improvement Society, the subject being the "Principles of Heating" with methods of application. The essay is illustrated by sketches that are very creditable to a young gardener.

— **FRUIT FROM THE CAPE.**—A further consignment of fruit from South Africa arrived at Southampton on Sunday 22nd inst. by the Union Steamship Company's R.M.S. "Athenian." This consisted of 334 packages of Apricots, twenty-seven boxes of Peaches, and two boxes of Pears from Cape Town; and 183 cases of Mangoes and Pines from Durban. The fruit was disposed of by London salesmen on Tuesday and Wednesday last.

— **THE MEXICAN JUMPING SEED, or "Devil's Bean,"** is, says "The International Journal of Microscopy and Natural Science," a euphorbiaceous plant of such poisonous properties, that it is used by the Indians to envenom their arrow points. It not having been scientifically identified to satisfaction, Dr. C. V. Riley has made a special study of it. The saltatory property is not intrinsic with it, but is imparted to it by an insect (*Carpocapra saltitans*), which secures lodgment within the Bean and does the work. Dr. Riley believes that the insect is developed in the capsules of several species of the genus *Sebastiania*.

— **COVERING MUSHROOMS.**—At a recent meeting of the Montreal Horticultural Society Mr. John Perrin, in a paper on the "Culture of Mushrooms in Winter," recommended that light sheets of paper, such as newspaper, should be spread over them as soon as the clumps appear, and that they be syringed lightly two or three times a day. Under this treatment they grow faster, become larger, and weigh more, having perfect form and colour as well as improved flavour. If allowed to become to any extent dry and discoloured by the air, they at once acquire an unpleasant taste similar to that of meat which has been too long exposed to the air.

— **BRUSSELS SPROUTS IN GARDENS.**—I find that Mr. Bowerman of Hackwood has arrived at the same conclusion as I had long since, that the large sprouted forms of Brussels are far better suited for field work than for deep, rich soils in ordinary gardens. He finds that all his stems give the sprouts not only too large but very open, and is resolved to come back to some of the smaller hard-sprouted varieties as being better suited for his purposes. If gardeners would plant their Brussels Sprouts on hard soil that has carried a crop of Winter Spinach, and has not been dug for the reception of the Sprouts, they would have far better results. I see no such stems of Brussels Sprouts in rich garden ground as I have seen in the Middlesex fields.—A. D.

— **BOURNEMOUTH GARDENERS' ASSOCIATION.**—There was a good attendance of members at the meeting held on Wednesday, January 18th, when a lecture was given by C. W. H. Greaves, Esq., on "The Potato and Tomato Disease." The lecturer (who illustrated his remarks by diagrams) gave a short account of its first appearance in this country, also of the experiments which have been recently carried out to prevent the attack of the disease, and received the hearty thanks of the members. This Society has now been in existence four years, and is doing much good in the district. Lectures, by able scientific and practical men, are arranged to be given periodically during the year.—H. T.

— **GARDENING APPOINTMENT.**—We are informed that Mr. W. Thorpe, late head gardener at Shipton Court, Chipping Norton, has been appointed head gardener to A. A. Weston, Esq., Holme Grange, Wokingham.

— **DEATH OF MR. J. SHEPPARD.**—We regret to state that Mr. J. Sheppard, who for many years was head gardener at Wolverston Park, Ipswich, died on January 16th, in his fifty-eighth year. Mr. Sheppard was a good gardener and able manager.

— **FROST IN EDINBURGH.**—In the report on the temperature at the Royal Botanic Garden during last month Mr. R. Lindsay stated that frost was registered on twenty-three mornings, indicating a total of 192°. So much frost has not been registered at the Garden for the month of December since 1879.

— **PUBLIC PARK FOR RAMSGATE.**—Two firms having received instructions to prepare plans for laying out the grounds of Ellington House as a public park, the design of Messrs. J. Cheal & Sons, Crawley, has been accepted by the Council, and the contract for carrying out the work has been entrusted to them. The grounds comprise about 13 acres.

— **BECKENHAM HORTICULTURAL SOCIETY.**—This Society held a social gathering in the Public Hall, Beckenham, recently. Mr. A. J. Baker, one of the Vice-Presidents, occupied the chair, and there was a large attendance. During the evening a handsome silver-mounted tea service was presented to Mr. T. W. Thornton, in appreciation of his valuable services as Honorary Secretary.

— **HARDY CARNATIONS.**—Calling a few days since at Messrs. Hillier's Rose nursery, Winchester, I was very much surprised to find what I can honestly describe as some remarkably fine, clean, well-rooted Carnations in pots standing by the side of a nursery cart road, where they had been all through the winter, and perfectly uninjured by frost. Mr. Hillier said he had nowhere else to put them, and certainly nowhere else could they have done better. W. P. Milner, Mrs. Reynolds Hole, and others in large numbers were in splendid condition. The road in question runs due north and south, is very high, and also exposed. I regard the lofty air-swept position as having been in the favour of the Carnations. There were several hundreds of these plants in pots, and standing without ashes or anything else about them.—D.

— **GARDEN LABELS.**—Apropos of the lead labels brought to the notice of the Scientific Committee of the Royal Horticultural Society recently, it may be interesting to state that such are used in many gardens. At Holly Lodge, Highgate, the residence of Baroness Burdett Coutts, Mr. Willard has a useful contrivance for punching the lead labels. This he invented many years ago. It resembles a box about 18 inches long by a foot in width, and 3 inches deep. On the face or lid all the letters in the alphabet are printed, and at the back of each is a hole in which an iron punch, with the corresponding letter on the end, is inserted. By this arrangement the punches are always kept in their proper positions, and a practised hand can, by the aid of a hammer, dexterously punch the names on the narrow strips of lead that are used as labels. For Roses and fruit trees Mr. Willard finds lead labels by far the most serviceable.—C.

— **LIVERPOOL HORTICULTURAL ASSOCIATION.**—On Saturday evening one of the largest attendances in connection with the winter meetings assembled in the Museum, William Brown Street, Liverpool, to hear a paper on "The Bouvardia," by Mr. J. Glover, gardener to Sir A. B. Walker, Bart., Gateacre Grange. The Chairman for the evening was Colonel Wilson, Hillside, Allerton, and, in addition, there were present W. Fletcher Rogers, Esq., Mr. T. White (Chairman of the Association), Mr. R. W. Ker, Mr. W. Dickson, and many noted horticulturists. Mr. Glover dealt thoroughly with the cultivation of Bouvardias as one, two, and three year old plants, also growing specimens for exhibition. A suitable list of varieties was given. A short discussion followed, Mr. Ranger, and Mr. Ker, mentioning two varieties which Mr. Glover had omitted—viz., Purity and Mrs. Green as being excellent in every way. Mr. White, Mr. Sargent, and Mr. Healey following. A hearty vote of thanks, proposed by Mr. Rogers and seconded by Mr. Ranger, was passed to Mr. Glover. Afterwards the adjudicator's award was made known for the essay on the "Cultivation of the Croton," Mr. F. Atkin being the winner. Mr. Atkin subsequently read his paper, and was afterwards presented by the Chairman with the Society's certificate. A unanimous vote of thanks was passed to Colonel Wilson for presiding.—R. P. R.



— THE NEW RAILWAY RATES. — There appears to be much disaffection amongst the growers and sellers of fruit and vegetables in regard to the new railway rates. A correspondent writes to the effect that recently a consignment of Mushrooms, weighing 74 lbs. gross, sent from Southampton, was delivered at Covent Garden, and a charge of 7s. made by the London and South-Western Railway Company. This is at the rate of £9 10s. per ton—truly a most exorbitant charge.

— TOMATOES AND CANCER. — On many occasions it has been reported in the daily and other papers that Tomatoes cause cancer, though there appears to have been but little truth in the assertion. Relative to the question, Dr. Marsden of the Cancer Hospital, Brompton, now writes that the Committee of the establishment wish to publish that, in their opinion, Tomatoes neither cause nor excite cancer formation, but are a wholesome article of diet, especially when cooked.

— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION. — Our reporter was quite elated when he found one of his paragraphs taken from the *Journal of Horticulture* last week, and embodied with verbal accuracy in the leading article of one of our respected contemporaries. The leader writer was, no doubt, under the impression that what he found useful was a portion of the official report, but it was not. We make not the slightest complaint, but only remark that if by accident we are "caught tripping," we are usually favoured with a notice, and now in all courtesy return the compliment.

— CLERODENDRON THOMSONÆ. — When looking through the houses at The Lawn Gardens, Warwick, on January 12th, I was much struck with the beauty of a large plant of the above in full flower. To see this fine stove climber in the height of beauty at such a date is to me a somewhat novel sight. The plant in question covers the back wall of a stove, and being planted out between the flagstone walk and back wall the roots were apparently able to ramble freely in various directions. The necessary damping of the house preventing the soil becoming dry enough to secure perfect rest, a departure from the orthodox method of culture was resorted to. Some splendid long shoots had been produced, and the points of these were cut away, and the remainder trained thinly, so as to cover the whole surface of the wall, the result being that they flowered abundantly nearly the whole of their length.—D.

— ARE WEED KILLERS DANGEROUS? — As you are at all times ready to lend a helping hand to the working gardener, I shall be glad if you will allow me to ask the above question in the *Journal of Horticulture*. The enclosed cutting from a daily paper (in which it is stated that particles of arsenic deposited on walks are blown about with the dust) was handed to me by my employer, with instructions not to use any more weed killer. I have used several hundred gallons, but never felt the least injurious effect except the points of my fingers feeling a little tender for the first day or so after using it. Perhaps some of your correspondents will give their experience, and say if they have known a case of injury through passing over the paths, and if so, how long after the weed killer was used.—T. W. [Is arsenic the active agent in all weed killers? We think not.]

— BRIGHTON "NEW" HORTICULTURAL AND MUTUAL IMPROVEMENT SOCIETY. — Your Sussex and southern county readers will be interested to learn the happy turn horticultural affairs have taken at Brighton during the past year. At the annual general meeting of members held at the Imperial Hotel on Thursday evening, January 19th, under the presidency of Mr. C. W. Catt, the balance sheet for 1892 was presented and passed. From it we gather that their spring show was a success, giving a balance of £42. The summer exhibition was undoubtedly one of the best seen in Brighton for many years, but owing to a rather disadvantageous compromise having been granted to members of another Society, their balance was turned into a deficit of £28 8s. 4d. The amalgamation of the Chrysanthemum Society was now finally confirmed, and Mr. R. Miller, the Chairman of the latter Society, in a few remarks stated that, after paying all expenses and sending a donation of £10 to the Gardeners' Orphan Fund, they had the pleasure of handing over a balance of £112 15s. 5d. Thus the united Societies start 1893 with a balance of £84. Mr. C. W. Catt was re-elected President for the year; Mr. W. Belchan, jun., Chairman; Mr. R. Miller, Vice-Chairman; Mr. T. Billing, Treasurer; and Mr. Mark Longhurst, Secretary. A Committee of twelve gardeners and three amateurs were then elected by ballot from those sitting on the two Committees. May success attend them.—R. I.

— DEATH OF MR. WILLIAM BROWN. — Many readers will regret to hear that after a short illness Mr. William Brown of St. Mary's Nursery, Richmond, died on the 13th inst. Mr. Brown, who was in his fifty-fifth year, was well known in horticultural circles, especially in and near London, and a few years ago his effective groups of plants at the metropolitan shows secured him many medals. Mr. Brown also gained three gold and three silver medals at the great Quinquennial Exhibition, Ghent, in 1888. As a member of the Richmond Town Council Mr. Brown was held in high esteem, and his funeral, which took place on the 17th inst. at Richmond Cemetery, was largely attended by friends of the deceased.

— RAINFALL IN 1892. — The rainfall registered here for the past twelve months is 25.45 inches, only the merest trifle above that of Jubilee year. As compared with 38.52 inches for 1891 we find a difference of 13 inches. Where tree planting is done, such drought as that experienced last year is very hurtful, and in many instances means death to small trees as well as larger ones. We had less than an inch of rain monthly during February, March, April, and May. Up to the end of July we only registered 8.74 inches, as compared with 12.16 inches for 1891, a difference of 4 inches. When we consider that this shows a deficiency of 400 tons to every acre at such a critical period as the first half of the year, it can easily be seen how serious it is to those engaged in tree planting operations.—E. MOLYNEUX, *Swanmore, Hants.*

— FLOWERS BY TELEGRAM. — A New York florist has started a new and successful branch of business which is indicated by the words over his shop: "Flowers by telegraph to all parts of the world." He has arranged with the leading florists in every city in Europe, so that his customers can have their orders carried out without delay. The price of the cable, or telegram, is charged to the customer. A gentleman who wished a bouquet sent to a lady in Paris before she started to the theatre, called in one afternoon lately and gave the order. There were just two hours and a half to do it in, but the flowers were handed to the lady while she sat at dinner. Another gentleman, says "Pearson's Weekly," wished a floral greeting to reach a lady who had left New York for Liverpool, and when she arrived a man with a basket of flowers awaited her as she stepped ashore from the vessel.

— TYING CARNATIONS. — Almost every grower has his own way of tying Carnations, and while many still cling to cane stakes there are some later and more convenient modes. Mr. Dorner's way is at once neat, simple, and convenient. His plants are put in the rows alternately, so that they run in diagonal lines across the bed. At the ends of the beds and at intervals of about 12 feet along them a light wooden bar, supported at each side by an upright, crosses the bed about 10 inches from the surface. This supports a galvanised wire along each row of plants, the wire being fastened at the ends, while the cross-bars along the bed receive each wire in a little nick which keeps it from slipping. The tying material is cotton string, which is worked across the bed from one side to the other diagonally, making it appear in a series of triangles. The tying is very quickly done by two men, one at either side, passing the string across; it is given a loop over at each wire. The great convenience of this system is that while supporting the plant it is not crowded up together, and the string is not in the way when picking flowers. For very tall growers a second wire may be added above the first.—(*American Florist.*)

— BAROMETRIC PLANTS. — The "Petit Traité de Meteorologie Agricole," by M. Cana, contains a list of prognostics apropos of the aspect which certain plants present according to the state of the atmosphere. The following are a few examples:—If the head of *Nitella sativa* droops, it will be warm; if the head of the same plant stands upright, it will be cool; if the stalks of Clover and other leguminous plants stand upright, there will be rain; if the leaf of the Sorrel turns up, it is a sign of a storm; if the leaf of the Willow Grass slowly bends up, there will be a storm; if the flower of the *Convolvulus* closes, it will rain; if the flower of the Pimpernel closes, it will rain; if the flower of the Hibiscus closes, it will rain; if the flower of the Sorrel opens, it will be fine weather; if the flower of the same plant closes, it will rain; if the flowers of the Carline Thistle close, there will be a storm; if the flower of the Lettuce expands, it will rain; if the flower of the small Bindweed closes, look out for rain; if the flower of the Cinquefoil expands, there will be rain, but if it closes the weather will be fair; if the flowers of the African Marigold close, it will rain; if the scales of the Teasel become close pressed against each other, it will rain.



— **IVY-LEAF PELARGONIUMS.**—For the furnishing of the cones or pyramids which present such striking features on the lawn at Lady Wolverton's Coombe Wood residence, Mr. Woodgate winters many scores of plants in pots of diverse sizes, but chiefly in 32's, and the plants range from 4 feet to 6 feet in height. These are tied up to stakes closely together and kept fairly cool, and are really very crowded. As the spring draws on more room and air is given, and as early as is safe the plants are stood outdoors in shelter, where, being somewhat loosened, they break freely, and by planting time are full of buds, and some bloom. Such plants soon furnish a wire cone, and produce masses of bloom all the summer. Young plants are propagated and grown every year to deep up the supply.—A. D.

— **SPRAYING FRUIT TREES.**—Mr. E. S. Goff, of the Wisconsin Experiment Station, writes in the *Canadian Horticulturist*:—"We believe our experiments in preventing Apple scab have shown the Bordeaux mixture to be one of our best fungicides. We used a diluted form of it with good results last season, and would recommend fruit growers to use it as follows: 10 lbs. sulphate copper (blue vitriol) per 100 gallons of water, and about the same weight fresh lime or a little less. Dissolve in separate vessels and mix only when ready for use, as it is best if stirred constantly until sprayed on the trees or plants. For Apples, spray with the mixture once before bloom after growth starts. Spray once or twice immediately after bloom for the codlin moth, adding the necessary amount of Paris green or London purple. Another spraying or two with insecticide added to the Bordeaux mixture may usually be profitably applied. Our experience of last season demonstrates the value of spraying, and confirms our belief that it has 'come to stay.'"

— **ONIONS.**—One of the chief characteristics of the newer Globe Onions is that they have deeper or more globular bases. The Rousham Park Hero and others of the old White Spanish type had either a flattish or even somewhat hollow base, so that bulbs that seemed to be very large were yet very light relatively. We find in the best forms of deep yet flattish Onions Sutton's A1, Anglo-Spanish, Maincrop, and others, and of egg or globe-shaped Onions Sutton's Globe, Wroxtton, and Excelsior are of the finest. How far one may be better than another of those it is not easy to tell, as Onions vary on diverse soils; so far the heaviest Onions have been found in Ailsa Craig, although these do not keep well. Bulbs that are of apparently the same dimensions as Rousham Park Hero often weigh from 6 to 12 ozs. heavier because of the deep bases. Those who grow Onions only under ordinary conditions now find that these newer and finer strains give relatively to other sorts fully 30 to 40 per cent. more size and weight in their crops.—D.

— **PEAT MOSS LITTER AS MANURE.**—Apart from its use in the stable, peat moss litter is equally as serviceable in the garden. Whether this is due to its being so highly charged with ammonia when taken from the stable I am not prepared to say. A relative of mine has, however, proved its value by taking it fresh from the heap, broken up very small, and spreading some about 4 inches deep on slates over hot-water pipes in the stove, placing Allamandas, Clerodendrons, and other plants on the litter. As soon as the peat moss became mellow the roots appeared to be attracted through the holes of the pots into it and run in every direction, and stout firm flowering wood was produced. At the present time he has a large plant of Allamanda Hendersoni thus treated, which is still flowering, and looks likely to continue blooming for some time yet. The peat moss litter he has tried for various purposes, and finds it very valuable. I should much like to hear what other gardeners have to say on the subject, as I believe most people use peat moss as stable litter and nothing more.—J. W. WEAVING.

— **LOW TEMPERATURES.**—Referring to the recent frost in the January issue of the *Meteorological Magazine* Mr. J. G. Symons states that "some of the lowest records ever made in the British Isles have been from stations near the Cheviots and between there and Edinburgh, and that seems to hold good in the recent frost. Mr. Selby of Pawston, in the extreme north of Northumberland, reports the minimum of 3° in the night between January 5th and 6th, and adds that at Shawdon, near Whittingham, about twenty miles south-east of Pawston, on the same night it fell to — 2°; but he says nothing as to the quality of the thermometer at Shawdon or where it was placed. Another low record, and this time from verified instruments, is sent by the Rev. G. T. Ryves from Tean Vicarage in the valley of the Tean, above Uttoxeter, in North Staffordsbire; he had 4.4° in Stevenson's screen and — 0.6° on the grass. The record at Braemar Observatory was 9° below zero on the grass, or 41 Fahrenheit degrees of frost. The shade thermometer recorded 4° below zero."

— **PROTECTING FRUIT TREES AGAINST FROST.**—It is stated that in California, France, and other countries orchards are protected against frost by means of smoke during frosty nights, and in Victoria (Australia) several agricultural and horticultural societies have decided to promote unanimous action amongst fruit growers for that purpose. It would require something more than smoke to protect fruit trees from the frost we have experienced in this country lately.

— **SPARKLING RAIN.**—Rain which on touching the ground crackles and emits electric sparks is a very uncommon but not unknown phenomenon. An instance of the kind, so we learn from the "Meteorological Magazine," was recently reported from Cordova, in Spain, by an electrical engineer who witnessed the occurrence. The weather had been warm and undisturbed by wind, and soon after dark the sky became overcast by clouds. At about 8 o'clock there came a flash of lightning, followed by great drops of electrical rain, each one of which, on touching the ground, walls, or trees, gave a faint crack, and emitted a spark of light. The phenomenon continued for several seconds, and apparently ceased as soon as the atmosphere was saturated with moisture.

— **"THE ADVERTISER'S A B C."**—The magnitude of the enterprise of advertising, the great agent in trade expansion, is difficult to appreciate, and for conveying an intelligible idea of it we are unable to conceive anything better calculated to effect the purpose than this grand work of the great advertising agent Mr. T. B. Browne, 161 and 162, Queen Victoria Street, London, and Canal Street, New York. The "A B C" comprises nearly 1000 pages, admirably printed and well and attractively bound. Its character is accurately represented in the "Introduction," as follows:—"The 1893 volume of our Directory marks a distinct expansion, covering the journalistic ground more completely than has ever before been attempted. The information given represents an immense number of details, setting forth not only all serviceable particulars regarding the present condition of the press of the United Kingdom and the colonies, but embracing a mass of foreign newspaper data, collected from every corner of the earth and arranged on a plan of easy reference. The foreign and colonial sections in their existing form comprise every journal of importance within the various countries dealt with. The indices hitherto appearing at the end of the work have been considerably elaborated, and now serve the double purpose of indices and classified lists of journals, magazines, &c., and are placed at the beginning of the book; these include daily morning newspapers, daily evening newspapers, London Weeklies, London suburban newspapers, the provincial press (arranged in counties), magazines and periodicals, class and trade papers, and a general list, embodying the whole in alphabetical order. As usual, a number of statistical and literary articles of interest to newspaper people and advertisers are included in the volume, and will, it is hoped, add to its value." It is a marvellous production.

— **SHROPSHIRE HORTICULTURAL SOCIETY.**—The annual meeting of the above important Society was held in the Music Hall, Shrewsbury, on Thursday last, under the presidency of G. M. Salt, Esq. From the report and statement of accounts submitted we gather that the summer Show of 1892 was a success. The Committee hoped and believed that few would be found disposed to dispute the assertion that each year the Society endeavoured, and not without success, to manifest improvement and progress. The financial account disclosed a larger amount of receipts and expenditure than in any previous year since the establishment of the Society in 1875. As an illustration of the large receipts we quote the following figures:—Subscriptions, £414 19s; cheap tickets, sold previous to the Show by the Hon. Secretaries, £667 4s. 8d.; taken at the gates on the two days of Show, £2068 14s. 2d.; and sundry receipts, £591 7s. 4d., making the splendid total of £3742 5s. 2d., and forming an income which, we believe, is unsurpassed by any other horticultural society in the kingdom. After deducting the expenses of the summer Show the handsome profit of £1089 17s. 3d. resulted. The donations given by the Committee of this Society from its accumulated profits, recently purchased fourteen acres of land (at a cost of £3150) adjacent to the town of Shrewsbury, which it is intended to lay out as a recreation ground, and they have also contributed very liberally to local improvements at different periods in sums amounting to over £3500, besides having £1500 remaining invested. We heartily congratulate the Committee of Management and their excellent Hon. Secretaries (Messrs. Adnitt and Naunton) on the wonderful results thus achieved, which could not possibly have been accomplished without great expenditure of valuable time during the many years of the Society's existence. The spring Show of the Society will be held on March 23rd, and the summer Show on August 23rd and 24th. The money prizes in the schedule amount to nearly £720.



— **NARCISSUS PAPER WHITE.**—How useful this Narcissus is from Christmas time onwards, either in the form of plants for decorative purposes or as cut blooms. The purity of the flowers, and their not too heavily laden perfume, are features which ought to commend them at once. Our bulbs were potted early in October, placed outside, and covered with a good coating of ashes. The first week in December some were placed in one of the forcing pits, and by Christmas we were using the flowers for various decorative purposes. Considering the cheap rate at which the bulbs may be purchased, and the ready way in which they can be forced, it seems somewhat strange that this Narcissus is not more extensively grown in private establishments. The bulbs have flowered extremely well this season.—R. P. R.

— **SUMMARY OF WEATHER IN 1892.**—The year was remarkable for the 8 inches of snow which fell on February 15th, and for severe frost that occurred on February 17th and 19th when 0° (zero) was registered. A severe frost also happened June 14th which caused much injury to all tender plants. Barometer, highest reading, 30·62 on March 30th; lowest, 29·07 on February 17th; average, 29·96. Total rainfall was 21·93 inches, which fell on 182 days; the greatest daily fall was 0·85 inches as snow on February 15th; the total fall is 5·37 inches below the average quantity. Highest shade temperature was 84° on July 3rd, lowest 0° on February 17th and 19th; lowest on grass, 4° on February 17th; mean of daily maximum readings 54·87°, mean of daily minimum 38·74°, mean temperature of the year 46·80°, number of days frost in shade 117, number of ditto on grass 183; mean relative humidity at 9 A.M. (taking saturation as 100) = 83·93. A favourable year in this district for all root crops and small fruit, but a bad one for corn, grass and autumn fruits.—W. H. DIVERS, *Ketton Hall Gardens, Stamford.*

— **WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.**—The annual meeting of the above society was held in the Mechanics' Institute on Thursday last, Mr. B. Cromwell presiding. The Secretary read the report, was of a satisfactory character, and the statement of accounts showed a creditable balance. A special feature in the report was the account of the Floral Concert, which showed a balance of £12, which had been equally divided between the Gardeners' Royal Benevolent Institution and the Gardeners' Orphan Fund. The library is in a flourishing condition, a good number of books having been added during the year. The interest in the essays has been considerably enhanced by valuable special prizes, which have been awarded as follows:—Silver medal, presented by the *Journal of Horticulture*, subject, "Principles of Heating," to Mr. H. Corlett, The Gardens, Woolton Wood; "The Culture of Mushrooms," prize presented by Messrs. Thomas Davies & Co., Wavertree Nursery, awarded to Mr. Wm. Disley, Allerton Priory Gardens; "Hardy Plants Suitable for a Cottage Flower Garden," prize presented by Rev. G. H. Spooner, Rector of Woolton, awarded to Mr. A. Rowlands, The Gardens, Woolton Wood. A cordial vote of thanks was accorded the Secretary and Treasurer for their valuable services during the past season, and they were unanimously re-elected; a similar vote being also the retiring Librarian, Mr. J. Griffiths. Mr. T. R. Burrows was elected Librarian for the ensuing year. The Committee are, with two exceptions, the same as before, Mr. B. Cromwell vice Mr. Breeze, and Mr. W. Edwards vice Mr. F. Davis. The meeting terminated with the usual vote to the Chairman. The next meeting is announced for February 2nd, when Mr. Wm. Disley, the courteous Secretary, will read his prize essay on "The Culture of Mushrooms," and Mr. R. S. Waterman one on "Soils, and How to Treat Them." Mr. Harvey Gibson, Lecturer on Botany, University College, Liverpool, is engaged to deliver a course of six lectures at Woolton, commencing on the 26th inst.—R. P. R.

## FRUIT CULTIVATION AND IMPORTS.

MAJOR CRAIGIE, in his report for 1891 to the Board of Agriculture, refers to the attention which has lately been called to the extending cultivation of fruit in different forms in Great Britain. "A relative large advance," he says, "is now reported." The small fruit area to which he specially refers "has increased in every county of England and Wales, and in some counties by a remarkable percentage, although nearly a third of the English small fruit area is still to be found in Kent."

As I have not seen the statistics of the area of fruit cultivation in the Journal, perhaps you may think the figures which have been courteously forwarded to me by the Board of Agriculture of sufficient interest for publication. I also add the statistics of foreign and colonial fruit imported into this country for the years 1890-92. These may be of interest to the "distressed

agriculturist," who might in many cases do better with fruit than Wheat. The returns appear to be made up to June in each year.—H. R. WILLIAMS, 6, *Lime Street, London, E.C.*

The area under small fruit cultivation in England and Wales in each of the following years:—

1888...	...	...	...	...	36,700 acres
1890...	...	...	...	...	46,200 "
1891...	...	...	...	...	58,700 "

Compared with 1888 there is an increase in 1891 of no less than 22,000 acres. Of this increase 1760 acres were added to the small fruit area in Kent, the area for that county for the year 1890 being 18,061 acres, and for 1891 19,821 acres. From these figures it will be seen that Kent maintains its pre-eminence in fruit growing. Orchards also show a gradual and not inconsiderable increase in area.

In 1881 the returns show	...	...	185,000 acres
" 1891	"	"	210,000 "

an increase in ten years of 25,000 acres. Market gardens also show a considerable advance in area.

In 1881 there were under cultivation	...	46,604 acres
" 1891	"	81,368 "

an increase in ten years of 34,764 acres.

The following table shows the quantities and value of Raw Fruit imported into this country for the years 1882 and 1892, including Apples, for the years 1890 and 1891:—

	1882	1890	1891	1892	Value of Raw Fruit imported 1892, exclusive of Oranges and Lemons.
	Bushels.	Bushels.	Bushels.	Bushels	
Apples	2,386,805	2,574,957	3,147,373	4,514,700	£1,353,812
Pears	—	—	—	637,211	296,545
Plums	—	—	—	413,315	199,953
Cherries	—	—	—	216,990	134,847
Grapes	—	—	—	764,432	394,987
Unenumerated	2,614,056	—	—	841,022	388,141
	5,000,861			7,387,670	£2,768,285

NOTE.—Pears, Plums, &c., were classified as "unenumerated" previous to 1892. The returns for 1892 show an increase over 1882 of 2,386,809 bushels. Oranges and Lemons imported in each of the undermentioned years:—

	1890	1891	1892
Bushels	5,746,135	5,178,667	6,763,276
Value	£1,756,852	£1,591,052	£2,052,561



SOBRALIA LUCASIANUM.

WHEN well grown the Sobralias are exceedingly handsome Orchids, for although the individual flowers do not as a rule last in a good condition for a long period, fresh blooms are freely produced, and so a succession is kept up. Most of the species have brilliantly coloured blossoms, and amongst the best *S. Lucasianum* (fig. 11) must be given a prominent place. A specimen of this was exhibited by C. T. Lucas, Esq., Warnham Court, Horsham, before the Orchid Committee of the Royal Horticultural Society on June 21st, 1892, when a first-class certificate was awarded for it. This is a splendid form, the flowers being of large size. The lip is broad and somewhat flattened, soft rosy mauve in colour, the throat being light yellow. The sepals and petals are white, faintly suffused with rose, the whole making a charming combination.

CYPRIPEDIUM GERMINYANUM.

DURING the past few years numerous hybrid *Cypripediums* have been produced, and to all appearances we shall yet see many more varieties. At nearly every meeting of the Orchid Committee of the Royal Horticultural Society some hybrids are staged, and not a few of them have been certificated. It would be interesting to know, however, why in at least one instance a duplicate certificate has been adjudged; we refer to *C. Germinyanum* (fig. 10), illustrated on page 67. According to the Journal of the Royal Horticultural Society a first-class certificate was recommended for this hybrid on February 11th, 1890, when plants of it were exhibited by Messrs. J. Veitch & Sons and H. M. Pollet, Esq. Messrs. J. Veitch and Sons again exhibited this form at the Drill Hall on January 19th this year, and an award of merit was adjudged for it.



*C. Germinyanum* is, nevertheless, an attractive hybrid, and deserves its duplicated honour. It is the result of a cross between *C. hirsutissimum* and *C. villosum*. The petals resemble those of its first named, the pollen, parent in shape and colour; the dorsal sepal is shining purple edged with green, and the lip suggests *C. villosum* in shape.

#### LÆLIA VIRENS.

So far as my experience is concerned, this *Lælia* does not appear very frequently in other than comprehensive collections. It is by no means a showy species, the flowers being but about an inch in length, and are borne in racemes. The petals and sepals are pale greenish yellow, while the lip is white. This species was,

lacing every portion. It has four strong growths, and two or three good leads showing, and is this season carrying twelve racemes, which, put collectively, make over 500 individual flowers, and is a very fine sight. Several smaller ones are making quick progress. —R. P. R.

#### DOUBLE PRIMULAS.

TALKING with some neighbouring gardeners, the question was asked if the colour of *Marchioness of Exeter* was right, as we all have grown a variety under that name, and according to a coloured plate that I have by me is a flaked variety, and not pink as described in the *Journal* for the 12th (page 29), or are there two under the one name? I simply ask, as sometimes one gets misled, and the trade may make a mistake, of which



FIG. 11.—SOBRALIA LUCASIANUM.

I believe, originally discovered by Gardner in 1837, but was lost sight of for many years. It reappeared, however, in 1879, it being then in the collection of Sir C. W. Strickland, at Hildenley; but since that date *L. virens* has found its way into several well-known Orchid-growing establishments.—ORCHIDIST.

#### SACCOLABIUM GIGANTEUM.

It is always a pleasing duty to note cases of successful culture in any branch of horticulture. A case in point is the excellent way in which Mr. T. Elsworthy, gardener to A. R. Gladstone, Esq., Court Hey, Broadgreen, cultivates the above *Saccolabium*. From a small piece imported a few years ago from Burmah, and which was placed in a small basket in crocks, charcoal, and sphagnum, he has now probably one of the finest specimens of this Orchid in the country. The plant occupies a teak basket about 18 inches in diameter, and is growing in the above mixture, the roots inter-

I see an instance this season. A gardener sent to a firm for *Primula Peach Blossom*, and when the flowering time came round it was nothing better than the old *alba plena*. The principal variety I grow is under the name of *Mrs. A. F. Barron*, and a grand one I consider it where white flowers are wanted. When well grown it stands a long way ahead of the old double, and I find it much easier to propagate. I have been gathering from my plants every week since [the middle of November, and hope to continue till Easter. I enclose flowers of *Mrs. A. F. Barron*, and some of a sport from the same, also a seedling of last season's raising. The flowers are not so large now as at the first gathering.—J. GILBERT, *Merrow Rectory, near Guildford*.

[The flowers of *Mrs. A. F. Barron* are very good and pure, the sport is deep rosy pink, and the "seedling" salmon pink, with broad segments; it is very good and worthy of a name. The *Marchioness of Exeter* is a mottled or flaked variety, but somewhat erratic in colouration. We have seen some flowers nearly white, and others with little white visible on the same plant.]





## NATIONAL CHRYSANTHEMUM SOCIETY.

WE are requested by the Secretary to announce that the annual general meeting of the above will take place at Anderton's Hotel, Fleet Street, E.C., on Monday, February 20th, at 7 P.M., due notice of which will be sent to the members.

## KINGSTON CHRYSANTHEMUM SOCIETY.

At a recent meeting of the Committee of this Society it was resolved to recuscitate the former premier bloom classes, these having for the past few years dropped out of the schedule, offers of special prizes having been made for the best Japanese and best incurved flowers. Also, it was resolved to purchase and offer a further challenge vase, the present one being limited in competition, to the three winners, Messrs. Beckett, Carpenter, and Mease; that will give the considerable attraction of two challenge vases being competed for next November. In compliance with the urgent request of a number of local gardeners it has also been decided to establish several cut flower classes restricted to the parish of Kingston.

## CHRYSANTHEMUM SHOW BOXES.

I DO not think "Sadoc's" (page 55) proposition with respect to the increase of the size of Chrysanthemum flower stands will meet with general acceptance. If exhibitors are allowed to have boxes for Japanese flowers up to any size they like, though not beyond what is prescribed in the schedule, there will be chaos. It has already been so conclusively shown that there is no need whatever for the increase in size of the stands that it is almost certain in a year or two we shall hear no more about it. We have, during the past Chrysanthemum season, got back in our tastes more towards the flowers of form, substance, depth, and quality, and now care less for the huge, coarse flowers. The revulsion will soon lead to the expulsion of coarse flowers from stands, and the more refined, deep blooms will need no larger stands.—D.

## DECLINE IN INCURVED BLOOMS.

I THINK it will be conceded by those able to judge that the incurved Chrysanthemum is declining in popularity, not only as an exhibition flower, but for decorative purposes also. There are two main reasons for this—first, the increase in variety of form and colour of the Japanese section, and their greater adaptability to decorative uses; secondly, it is thought, and with good reason, that the blooms are not so high in quality as they were two or three years since. The reasons for this are not far to seek. Exhibitors have increased beyond the supply of able cultivators. Many persons are exhibitors now who have not had any practical training in the art of culture. Too many of the cultural details are left to young men who have not had much experience in the matter; hence the decline in the quality of incurved Chrysanthemums.

There are plenty of places where 1000 plants for the production of large show blooms are put into the hands of a youth to cultivate. He may be an excellent attendant, but when the crucial time arrives for him to prepare the blooms for show he is deprived of the opportunity to display his knowledge, or even to learn how to dress a bloom. What are known as professional dressers are called in just a day or so before the show to dress the blooms. These men cannot do justice to the flowers for obvious reasons, and the person who has borne all the labour of the season in cultivating the plants is not allowed to see the operation, which would enable him to become a proficient cultivator. In this way the standard of the blooms falls below what it was when the exhibitor combined the cultivator as well. Professional dressers are, in my opinion, detrimental to the desired standard of incurved Chrysanthemums.

## ENGLISH RAISED VARIETIES.

It is pleasing to note what an impetus has of late been given to the raising of varieties at home. When we can have such sterling varieties as W. Seward, James Shrimpton, Princess May, Beauty of Exmouth, Mr. C. Blick, and many others in one season, it makes one think if we cannot absolutely do without the aid of foreigners in this direction, we are not so dependent upon them as we were. With the introduction of English raised varieties I think there is not likely to be so much confusion as at present exists in some others. Cultivators will not need to burden themselves with so many varieties on trial before they can secure the deserving sorts.

It is an interesting phase of Chrysanthemum culture, too, especially when the hybridising part is carried out on some safe line as to which are the most desirable sorts to select as seed bearers and so on. What is wanted are varieties having good blooms on comparatively dwarf plants. These we are in a fair way now to obtain. With such forms as Avalanche, Mrs. Falconer Jameson, and Mdlle. Marie Hoste as types of habit, and Cullingfordi, Edwin Molyneux, and Sunflower to give the requisite colouring, we may in the near future look for all that is desirable in new varieties.

## HIRSUTE VARIETIES.

The catalogues to hand contain an increased number of varieties representing this section. But why do the raisers of new varieties

consider it necessary to append such long names as "L'Enfant des Deux Mondes?" Why not say White Louis Boehmer? One catalogue contains an English raised seedling, ruby crimson in colour, which should give a filip to this section. Since the advent of Mrs. A. Hardy it cannot be said that any variety added has been a success. This one still remains by far the best, only it is so seldom seen in really first-rate condition.—SADOC.

## CHRYSANTHEMUM LOUIS BOEHMER.

THIS variety proves to be well adapted for striking in July to give dwarf plants for decorative purposes. Mr. Gilbert of Burghley had some very good plants of it at Christmas which had been treated in this manner. These were also remarkable for the almost total absence of the usual hairs, causing the flowers to look like one of the ordinary varieties.—W. H. DIVERS, *Ketton Hall Gardens, Stamford.*

## LORD CANNING—STAKES.

I ENCLOSE blooms of the white Chrysanthemum Lord Canning, which I consider are good for the time of the year. They are grown on the "let alone" principle, I mean not cultivated specially for large blooms. What is your opinion of the stakes sent herewith? They are an idea of my neighbour, and I believe he is going to send them out as "Brooke's Patent." Either for pot plants or border use I find them good, being strong and tidy. They are made in various sizes.—W. J. GODFREY, *Exmouth.*

[The pure white reflexed Japanese blooms, from 4 inches to 5 inches in diameter, equal in attractiveness any we have seen in January, and excel most. The stakes of galvanised iron are light, neat, and practically imperishable, while the attachment towards the base is calculated to render them more firm in the soil than small galvanised wire supports generally are. Experience, however, is requisite for testing the practical value of the new stakes.]

## CHRYSANTHEMUMS FOR LATE FLOWERING.

I ENCLOSE two blooms of W. G. Drover. What do you think of the variety as a late bloomer? I find it most useful, as it stands well when cut; it is also effective for decoration in the conservatory, not liable to damp. Robert Bottomley is also another most useful variety for late work. R. C. Kingston is distinct and telling so late in the season; Leon Frache, Ralph Brocklebank, and Boule de Neige I find good, and should be grown by all those who have to fill the oft returning basket for room and table decorations. Is the bloom of Ada Spaulding true? —T. WEAVER.

[The blooms of W. G. Drover are 7 inches in diameter, and distinctly effective. Somewhat smaller but equally good is the specimen of R. C. Kingston, deep rosy purple, and the pearly white Robert Bottomley is attractive. We presume you have no difficulty in "filling the basket," or so many could not have been spared. The blooms named Ada Spaulding are not in character, and the plant may or may not be correctly named. They are not typical examples of the variety.]

## INCREASED SIZE OF STANDS.

I FEAR "Sadoc" in last week's issue (page 55) fails to grasp the real pith of the case. The difficulty lies not so much in "defective judgment owing to the blooms not having space to show themselves," because if all stands were of a uniform size, all exhibitors would compete on the same lines, and judging would go on without a hitch. Owing to the blooms being packed so closed together on the board, it is a matter of impossibility for the judges to test their solidity without doing damage. This is one of the reasons of small boards being so decried by exhibitors. What we need is a larger board, and an absolute rule as to size and height regarding it.

As regards "legislating for the few to the detriment of the mass," the question naturally arises, Where is all the interest centred in an exhibition? Is it in the first three stands, or is it in the mass? Why should large flowers be squeezed on a board far too small for them because those behind cannot completely cover the same amount of space? Surely this is not a good "object lesson." "Smart" exhibitors are chary of using a larger board because of the known antipathy of judges generally to green lines of board showing between the flowers. Nor is it a matter for wonder that slight mistakes should occur with their consequent unsatisfactory results to exhibitors when we consider to what a fine point keen competition has brought us, and when we see before us two stands of which the flowers differ but little in quality, though materially in general effect. The closer packed of the two looks grand as a whole, not a green patch visible, and as even as art can make them appear, the fact of being close together tending to hide any slight imperfections and irregularities in size that may exist. This is not the case with that where, owing to the blooms having, we will suppose, another inch of space, each one stands almost free of its neighbour, and, should there be a weak point, it would be instantly apparent to every eye; and in any case the stand would exhibit more irregularities in size, for it is impossible to get a dozen blooms the same width and depth. Now to which stand is the prize to be awarded? To that which is most pleasing to the eye? or will the judges overcome their prejudice and reward the intrepid exhibitor for daring to display the slight faults already alluded to?

I should like to add here that judges, in my opinion, are prejudiced only when the two styles are seen in opposition, for I believe 90 per cent. of growers are in favour of reform. So far as I can see, the only weighty objection to be urged against it is the amount of space at



command. If secretaries could see their way to overcome this difficulty the rest should be easy.

I must join with "Sadoc" in thinking little of conferences after the result of the Chrysanthemum Conference. That such a meeting should have been rendered useless is to be regretted.—H. BROWN, *Beaurepaire*.

#### N.C.S. EXAMINATIONS.

MR. GODFREY (page 54) asks me why the Committee could not investigate the Beauty of Exmouth case without fear of a libel suit the same as the Wells' case was gone into? To this I can only say that I am not the lawyer who was consulted, and can, therefore, only assume the reason from the facts at hand. As Mr. Godfrey and one or two others have taken up their line of argument upon a somewhat similar foundation to that contained in his inquiry, it may be useful to point out that what appears to be an apparently contradictory decision in his case is in reality not such. When a notification first appeared in the *Journal of Horticulture* of an alleged irregularity on the part of a member of the Floral Committee, the General Committee at their following meeting nominated the Society's officials as a sub-Committee to go into the matter and report the result. This was done and the report in due time adopted.

The Wells' case, on the contrary, was brought forward some weeks later by a member of the General Committee at one of its meetings, and thereupon fully discussed. It was not deemed necessary to refer that case to a sub-Committee, and it was dealt with then and there upon the motion of the introducer. What seems to be inconsistent is, therefore, Mr. Godfrey will perhaps agree, easy to understand. Two distinctly different questions were gone into by two different bodies, and the sub-Committee that inquired into Mr. Godfrey's complaint cannot in any way be held accountable for what the General Committee subsequently did in the other.

It is to be feared that many of those interested in the controversy, if not some of his actual sympathisers, will consider Mr. Godfrey displays a regrettable weakness in his argument when he says he would scorn to shelter himself behind the law, &c., and more especially as only a few weeks have elapsed since he announced his intention of leaving no stone unturned to clear himself from what I consider a fancied imputation. When a man's honour, integrity, or veracity is really impugned, he is morally bound to avail himself of any legitimate means to protect it, and the law is certainly in the eyes of the world the most efficacious. But Mr. Godfrey is over-sensitive in thinking our decision stigmatises him as a person who has brought an unfounded charge against another. It does nothing of the kind. Mr. Godfrey's opponent would have just as much right to assert that the same decision in face of his sworn statement branded him with a charge of perjury.

Mr. Godfrey being a principal in the matter, and therefore having it very much at heart, cannot see that the two cases are not identical. There is a vast difference between Mr. Wells' charge and his. Mr. Wells had documentary evidence to rely upon, while Mr. Godfrey's allegation, which may be quite as truthful, is entirely based upon mere oral statements. Moreover, Mr. Wells had the courage openly to name the person he complained of, thereby accepting any legal responsibility that attached. It is impossible not to think that had Mr. Godfrey adopted this course in the first instance, he might, even with a weaker case, have had no cause to complain that the Committee were precluded from proceeding with as full an investigation of the Beauty of Exmouth case as he could have wished.

In conclusion, I cannot help thinking that these facts must, in a great measure, have influenced the legal gentlemen who advised the sub-Committee as to the liability they would incur.—C. HARMAN PAYNE.

[The examination into the truth of the two allegations by two separate Committees has not hitherto been made clear to the Chrysanthemum public.

We pass from that to note that as we were the agents, with Mr. Godfrey's consent, in bringing his letter in the "first instance" to the notice of the N.C.S. officials, we are bound to say it did very clearly contain the name of the person he complained of. The Treasurer was very glad to have a copy of the letter, and it was taken in our office by one of his clerks. Mr. Wells' exposure was the result of his inability to get his case considered by the officials, as is evident by the correspondence in our possession.

We have said nothing against the decision of the Sub-Committee, which we published. It does not affect us in the least, but it does others, and our columns have been open with equal freedom to accusers and accused.

We are a little interested in one element of the dual case—namely, the apparently anxious desire of the officials that we should publish the name of a person whom they have *not* censured in one case, while they refrain from publishing the name of one whom they *have* censured in another. We have not the remotest wish to reveal the identity of the censured individual, but we are a little curious to know on what principle the officials reconcile their request to us with their own act of negation. Perhaps Mr. Harman Payne, with his great logical acumen, can explain the matter.

We are at liberty to add that we think Mr. Fowler's proposition is the best that has been made, and Mr. Godfrey has frankly accepted it. Why should anyone else hesitate to do the same?]

CAN you tell us where Mr. R. Dean is, and why he is so silent? He is

generally ready enough with his pen when he sees a chance to score a point or give a rap to an opponent.—A MEMBER.

[We think Mr. Dean is at Ealing, and we have heard that he gives "raps with his pen" on postcards to persons whose articles do not please him. This has not lessened the supply. We almost wish it had, as we have not been able to publish by any means all the letters which have poured in upon us.]

#### APPLE DISCUSSION.

##### APPLE LADY HENNIKER.

THIS is a magnificent variety for cooking. When baked, the fruit, after being cut into slices does not break into pieces like some sorts, but retains the shape previously held. Although this Apple has rather an acid taste when raw, it is one which can easily be eaten when cooked without the addition of sugar. As a cropper it is a capital sort; in strong land it is somewhat liable to being specked in the skin, which detracts from its appearance. It appears to be more suited for sandy soil, although it bears freely enough in that which is heavy and naturally rather wet.—E. M.

##### THE ORIGINAL BLENHEIM PIPPIN APPLE TREE.

To be correct for history I should like you to put a different rendering of a passage appearing in page 36. Cottages now occupy the site of the old garden where the original Kempster Apple tree grew, in Old Woodstock. The gasometers are situated in New Woodstock. They occupy the garden site where I grafted the scions which I took from the old tree.—R. F.

##### APPLE RAMBOUR FRANC.

THE discussion on Apples in the *Journal* has had the effect of bringing many of the best varieties into prominence, and the above is one of such first-rate excellence that I think it fully deserving of a trial by those not already acquainted with its merits. To me it seems a not very familiar or freely planted sort; but for free bearing and good qualities as a culinary Apple it is certainly a very valuable one. It is one of those Apples that is sure to elicit the query, "What sort is this you have here?" by those to whom the variety is unknown, it being most distinct in general appearance. In the "Fruit Manual" Dr. Hogg gives its season as September and October, but with us this year it is much later than this, our supply promising to last for a few weeks yet to come. Apples, however, appear to be very variable this season in their time of use, some reputedly good keeping ones having to be cleared out before their natural season arrives; others, on the other hand, like the one under notice, continuing some weeks later than they usually do. Although I am no advocate for planting simply for the sake of variety, I certainly would advise those who are extending their fruit plantations this season to add this one to their list if it can be procured. Dr. Hogg says it is a strong and vigorous grower, an abundant bearer, and a good culinary Apple—good all-round qualities such as no one can dispute, and such that are not met with in many popular Apples of the present day.—W. S.

##### APPLE LEMON PIPPIN.

WE hear very little of this variety, yet with us on a strong clayey soil it is one of the most serviceable culinary Apples we have. The trees are on the Crab stock and have low stems, the branches being stiff and erect, only a moderately large size of head being attained. Very rarely do they fail to bear well, and this year the crops were heavier than usual. The majority are near the size of Lemons and not unlike them in form. Where most exposed they are coloured somewhat, but the rest were grass green in colour when gathered, and only now changing to a pale yellow. It bakes or boils admirably, and it is not to be despised for dessert purposes. This season the variety promises to keep well, and we most probably shall have Lemon Pippin till March.—I.

##### WALTHAM ABBEY SEEDLING AND DR. HARVEY.

ON page 500 (December 8th, 1892) "A. D." says that he has not grown Dr. Harvey Apple. "J. A. W." also writes on the same page, saying he cannot persuade the growers in North Suffolk that there is any Apple to beat Dr. Harvey. I do not think "J. A. W." would be able to persuade those of his Norfolk neighbours who possess a tree of Dr. Harvey that there is any Apple except the Norfolk Beaufin to beat it. Dr. Harvey appears to have been largely planted at one time in the eastern counties. I used to know where the best trees of Dr. Harvey Apple were when a boy at school in Norfolk. But to return to Waltham Abbey Seedling; my opinion is that there is no difference between Waltham Abbey Seedling, Dr. Harvey, and Wormsley Pippin. I have grown them all, and their manner of growth, flavour of the fruit, shape, and colour is identical. I am at the present time using fruits for the house, which have been grown on trees named Wormsley Pippin. Wormsley Grange is another name for this Apple, both named after Wormsley Grange, near Hereford, belonging to the family of the late T. A. Knight, Esq.—JOHN CHINNERY.

##### APPLE HISTORY—ORIGIN OF THE BLENHEIM PIPPIN.

THE article on "Apple History," in reference to the origin of the Blenheim Orange Pippin, by Mr. Robt. Fenn (page 36), is very interesting. He seems to point out that his grafts taken from the parent stock "long, long" after 1847 formed the source of all Blenheim trees, as he asks, "Where in living arboriculture can be traced trees other than mine directly handed down by grafts from the old original?" I



answer, near here (Crawley) there are many acres of land that were planted by a Mr. Poupard, a nurseryman then near London. They were planted from surplus stock in, or about 1820, and there are a few very old men who helped to do it as boys, and among the trees are many Blenheim Pippins that were in full bearing "long, long" before Mr. Fenn cut the grafts he speaks of. I remember the orchards being old forty years ago, and have a tree that I grafted about 1855 from a full grown fruiting tree growing at another place close by. Here are the trees and here are the men who planted them.

I rather think this work of Kempster must have been an effort of his to gain "fame;" else how comes it that well grown standard trees from a plentiful stock in a nursery (surplus and unsaleable) could have been planted near here in 1820, as they were? It seems more reasonable to believe that someone brought the first grafts or seeds of the variety from Blenheim in Germany at the time or soon after the famous victory by the Duke of Marlborough there in 1704, and named it Blenheim in commemoration of the event and place from whence it came. This would be reasonable, because locomotion was not so rapid then as later on, and it would take nearly 100 years for things to get about in those days; it takes some time now to establish a new variety—some years—and if the variety was first propagated soon after the famous victory in 1704, then there would be time for Mr. Poupard to get overstocked at about the beginning of this century, as was the case.

There are many vicissitudes that might occur to give Kempster a chance to say he raised the tree. All I can truly say for certainty is that these things I have stated are solid facts. These Blenheim trees were old before Mr. Fenn cut his grafts at Woodstock.—B. WELLS, F.R.H.S.

#### STOCK VARIABILITY.

THE note by "A Yorkshireman," on page 36, in your issue of January 12th, commenting on a previous paragraph therein referred to, is very interesting, and suggests to my mind a matter I have not noticed correspondence on. In all trade lists trees are generally offered worked on the Paradise, Doucin, or Crab stocks. Writers to the horticultural papers give their experience and the nature of their stocks, soils, and sometimes situation and locality, and how best their trees succeed, often with the very opposite results—some finding that a variety will succeed with them on one stock, while another finds it no good, or later and slower in growth and bearing. Now, do not many obtain their trees from different sources and worked on free stocks, while they may be on stocks raised from pips, or in the case of dwarfing stock, as Paradise, raised from seed, which flowers may have been fertilised from neighbouring trees? Would not this account for many variable results when the selected varieties have been grafted or budded on to them? seeing the varying influences in trees and plants of different nature by the influence of stock and scion often causing sporting, bud variation, and from which fixations have been secured. Why, then, should there not be some such even hereditary influences in fruit tree stocks in their nature as to soil, adaptability, and bearing condition? There are several kinds of Paradise stocks, and I have seen imported ones making a miserable existence on a stiffish soil, not even growing fit to be worked upon. Several of our leading firms have made selections of different stocks with broad leaves, and keep them true by layering. Have any authenticated experiments been made of selecting similar varieties of pips from fruit grown on trees worked on the various known stocks, and with what marked results on different soils? Any information on this point would be interesting.—T. W. W.

#### CYCLAMENS AND CINERARIAS AT READING.

IN speaking recently of *Primula* progress in Messrs. Sutton and Sons' Nursery incidental reference was made to the *Cyclamens* and *Cinerarias*. So fine are the strains of both, and so admirably are the plants grown, that they merit more than a passing allusion. *Cyclamens* are grown in thousands, in fact they are almost as great a feature as the *Primulas*, and in general excellence they are certainly not inferior. The varieties of the Giant strain are all beautiful selections, uniting free blooming with flowers of great size. Giant White, for example, is the model of what a *Cyclamen* should be. Its flowers are of large proportions and considerable substance, while they are of the purest white. These qualities are allied with a compact habit and foliage of marked beauty. Another splendid variety is that known as Giant Crimson and White, it has all the qualities of the other, differing only in the crimson base to the large white flowers. Giant Rose, Giant Crimson, and Giant Purple vary in colour alone, they have the same qualities of large size and perfect habit as the others.

Perhaps the most remarkable variety for free-blooming qualities is *Butterfly*. It is pure white, and clothes itself with flowers. In habit, too, it is unexcelled. *Vulcan* is the richest in colour, being a fine purplish red, and it is so telling in hue as to deserve special attention. Quite a new break of colour has been secured in *Salmon Queen*, which is bright salmon pink with mulberry base. It stands out perfectly distinct from all the others, and is beautiful under artificial light. It has short, broad, substantial petals. The plant is very compact in growth and a free bloomer. There can be very little doubt that this variety will become popular. It is a pleasure to note the magnificent condition of all the plants. They are very finely grown, and in the most robust health.

The *Cinerarias* are equally noteworthy both for quality and culture. So far as vigour and substance of leaf are concerned the

plants are like healthy field Cabbages, the foliage being broad stout, and leathery. Many of the plants are 2½ to 3 feet across. This in itself would not be enough, but there is high quality in the flowers too, the individual blooms being large, substantial, well-rounded, and the petals evenly folded. Both the self and the belted flowers are superb. Three varieties are grown under name—Sutton's White, Blue, and Red-edged, all being beautiful selections, but there is a very large range of colour besides, these being blended and sold as Sutton's Superb Mixed. In vigour of growth and size of truss the plants leave nothing to be desired, while the fact that these qualities are united with flowers well up to the florists' standard completes the merit of the strain.—A CALLER.

#### EXPERIMENTS WITH PLANTS IN LARGE AND SMALL POTS.

I HAVE been somewhat interested in noting the behaviour of various plants cultivated in pots of different sizes, more especially *Carnations* and *Chrysanthemums*. I am able to send you a few examples of the latter, and I trust you will not make fun of them, accustomed as you are to gigantic specimens. The plants are cultivated for general decorative purposes and affording flowers for cutting. Nos. 1, 2, and 3 are examples of *Avalanche* from plants grown respectively in 6, 7, and 9-inch pots. No. 1 is one of fourteen, the others are members of a somewhat larger family. The best blooms I had of this variety were cut at Christmas, and these were produced on a plant grown in an 8-inch pot. No. 4 is *Peter the Great* from an 11-inch pot, thirty-six to forty blooms on each plant. No. 5 is *Source d'Or* from a 10-inch pot, two dozen to each plant. No. 6 is *L'Ebouriffée*, 6-inch pot, eight blooms. No. 7, *Guernsey Nugget*, in a 9-inch pot, thirty-six blooms. No. 8, *Mons. Astorg* from a 10-inch pot, two dozen blooms.

The remark I have to make about these is that most varieties are unsuitable for cultivating in small pots, though an 8-inch is quite large enough for *Avalanche*. There is a loss both in size and in the number of flowers borne when the plants are grown in smaller pots. *L'Ebouriffée*, *Etoile de Lyon*, and *Mrs. F. Jameson* are examples of others which succeed better in rather a small pot than in a large one. *Mary Anderson* is very suitable for small pots, a 7-inch pot giving one floriferous plant and the blooms of good size; but in the case of the useful cutting varieties, including those of which examples are sent, I find it pays to grow them in pots 9, 10, and 11 inches in diameter. The growth is, of course, somewhat taller, but a much larger number of equally good flowers are secured in much less space and with no more labour. However, I think pots 11 inches in diameter are quite large enough, and in this size three good young plants can be placed at the time of the last potting. Three young plants grown together in 7-inch pots make floriferous bushes when transferred to 10-inch pots.

With regard to *Carnations*, I have flowered plants in pots of from 5 to 8 inches in diameter. The first named size is too small. A plant does fairly well in a 6-inch pot, and that is all. This year I am cultivating a number in 7-inch pots, as this size seems to suit very well. Three plants in a large pot succeed much better than if each were flowered individually in a pot of a smaller size. The same effects were very noticeable in the case of *Fuchsias*, 5-inch pots giving less desirable results with plants of the same age and variety in 7 and even 6-inch pots. The time the plants continue in flower are affected very markedly in favour of the plants grown in the larger sized pots. In the case of *Begonias* this feature is also particularly noticeable. With *Zonal Pelargoniums* the improvement is most conspicuous in the increased size of truss and pip.

*Crotons*, *Ficus elastica*, and *Dracenas*, as examples of foliage plants, do not grow so rapidly or attain the stature in 5-inch that they do in 6-inch pots. The latter is a very good size, as along with a sufficient development of the plants there is no difficulty in utilising them in furnishing, either in groups or in small vases.—A SCOTCHMAN.

[Fancy a Scotchman fearing we shall "make fun" of his flowers! No, we take them seriously. The examples of *Avalanche* *Chrysanthemum* show the same relative differences in the size of stem, foliage, and bloom as the pots do in which the plants were grown. The other varieties are fresh and bright, the blooms being large enough for decorative purposes. Many persons would be glad to have plenty and to spare of such flowers at this season of the year.]

#### THE CLIMATE OF COLORADO.

THE annual meeting of the Royal Meteorological Society was held on Wednesday evening, the 18th inst., Dr. C. Theodore Williams (President) in the chair. After the report had been read, and the officers and Council for the ensuing year had been elected, the President delivered an address on "The High Altitudes of Colorado and their Climates," which was illustrated by a number of lantern slides.

Dr. Williams first noticed the geography of the plateaux of these regions, culminating step by step in the heights of the Rocky Mountains, and described the lofty peaks, the great parks, the rugged and grand canons, and the rolling prairie, dividing them into four classes of elevations between 5000 and 14,500 feet above sea level. He then dwelt on the meteorology of each of these divisions, giving the rainfall and relative humidity, and accounting for its very small percentage by the moisture being condensed on the mountain ranges of the Sierras lying to the west of the Rockies; also noticing the amount of sunshine and of



cloudless weather, the maxima and minima temperatures, the wind force, and the barometric pressure.

Dr. Williams quoted some striking examples of electrical phenomena witnessed on Pike's Peak (14,147 feet) by the observer of the U.S. Weather Bureau, when during a violent thunderstorm flashes of fire and loud reports, with heavy showers of sleet, surrounded the summit in all directions, and brilliant jets of flame of a rose-white colour jumped from point to point on the electric wire, while the cups of the anemometer, which were revolving rapidly, appeared as one solid ring of fire, from which issued a loud rushing and hissing sound. During another storm the observer was lifted off his feet by the electric fluid, while the wrist-band of his woollen shirt, as soon as it became damp, formed a fiery ring around his arm. The climate of the Parks is, however, Dr. Williams considered, of more practical interest, and in these magnificent basins of park-like country interspersed with Pines, and backed by gigantic mountains, are resorts replete with interest for the artist, the sportsman, the man of science, and the seeker for health. Most of them lie at heights of from 7000 to 9000 feet, and so good is the shelter, that usually snow does not long remain on the ground, while Herefordshire cattle in excellent condition are able to fatten on the good herbage and to lie out all the winter without shed or stable.

Dr. Williams predicted for these parks a great future as high altitude sanatoria for the American Continent, especially as several of them have been brought within easy distance of Denver, the queen city of the plains, by various lines of railway. The resorts on the foot hills and on the prairie plains at elevations of 5000 to 7000 feet include, besides Denver, Colorado Springs, Manitoba, Boulder, Golden, and other health stations, which can be inhabited all the year round, and where most of the comforts and luxuries of American civilisation are attainable in a climate where not more than half a day a week in winter is clouded over, where the rainfall is only about 14 inches annually, most of which falls during summer thunderstorms, where the sun shines brightly for 330 days each year, and where the air is so transparent that objects twenty miles off appear close at hand, and high peaks are calculated to be visible at a distance of 120 miles.

Dr. Williams summed up thus:—The chief features of the climate of Colorado appear to be—1, Diminished barometric pressure, owing to altitude which throughout the greater part of the State does not fall below 5000 feet. 2, Great atmospheric dryness, especially in winter and autumn, as shown by the small rainfall and low percentage of relative humidity. 3, Clearness of atmosphere and absence of fog or cloud. 4, Abundant sunshine all the year round, but especially in winter and autumn. 5, Marked diathermancy of atmosphere, producing an increase in the difference of sun and shade temperatures, varying with the elevation in the proportion of 1° for every rise of 235 feet. 6, Considerable air movement, even in the middle of summer, which promotes evaporation and tempers the solar heat. 7, The presence of a large amount of atmospheric electricity. Thus the climate of this State is dry and sunny, with bracing and energising qualities, permitting outdoor exercise all the year round, the favourable results of which may be seen in the large number of former consumptives whom it has rescued from the life of invalidism and converted into healthy active workers; and its stimulating and exhilarating influence may also be traced in the wonderful enterprise and unceasing labour which the Colorado people have shown in developing the riches, agricultural and mineral, of their country.

## NOTES ON CLAREMONT.

### CAMELLIAS.

ONE of the most interesting of houses devoted to the cultivation of the Camellia is that at Claremont. It stands on a very elevated portion of the pleasure grounds, quite remote from any other buildings, and within it the Camellias are planted out in two large raised beds, these being edged by raised stone margins, thus enabling ample depth of soil to be furnished. The plants now are very dense, so much so, in fact, that they form all round a perfect close cropped face of leafage and bud. They reach fully 10 feet in height, and the various sorts give many thousands of flowers over a long season. This lasts from early in December until the end of April. The house is a long span, and being so elevated forms a very striking feature in the grounds. Of course, it is needful to give the bed in which the Camellias are growing good soakings of water occasionally, and that has to be carted to the house from the neighbouring lake.

### LIBONIA PENROSIENSIS.

Under this appellation there is growing in one of the greenhouses at Claremont, Esher, a large number of dwarf bushy little plants in pots that are exceedingly pretty and most valuable for blooming at this time of the year. The plants and flowers, which are reddish scarlet and about an inch long, bear close resemblance to *Cuphea platycentra*. They were raised from cuttings struck in the spring, and have since been grown in very gentle warmth. It is a delightful little plant for the season.

### OLD WALLS AND TREES.

I observed also that Mr. Burrell had been doing his best to give his Plum trees on an east wall a fresh start by taking them clean from the wall, hard thinning the wood; then very liberally coating the wall with a dark brown wash of lime, softsoap, clay, &c., with which to fill in the myriads of holes made in the mortar, where nailing has been practised for perhaps 100 years. When walls get into this condition they

present a peculiar difficulty to the gardener. If, as in this case, the wash be thick enough to coat the wall it does not fill the holes, all of which serve to afford the insects habitation. If the wall face be properly pointed all over it will adhere only if one-half the material be cement, and that will not admit of nailing. The only course left seems to give the face of the wall a coating of cement compost, then wire it over. Of course, in such case the holdfasts for the wire must be fixed before the coating of cement is given; then when that is set the wiring may be done, and the trees secured to them. That for wall trees there is no plan so satisfactory as is that of nailing there can be no doubt; wiring and tying the shoots is at the best but a makeshift. It seldom happens, however, that trees thrive so well on wires as on the walls direct. —A. D.

## GASTROLOBIUM VILLOSUM.

THIS is a very pretty shrubby plant, and one that should be more generally grown for the embellishment of greenhouses and conservatories. As will be seen by the illustration (fig. 12), the flowers



FIG. 12.—GASTROLOBIUM VILLOSUM.

are on small racemes, which are freely produced during the spring and early summer. The standard, or upper portion of the flower, is large and of a dark orange colour, while the wings and keel are claret coloured. The leaves are dark green, terminating in small hooked spines. The stems and leaf margins are thickly set with hairs, from which character the specific name is derived.

The species under notice, as indeed do all the *Gastrolobiums*, require similar treatment to that generally accorded greenhouse hardwooded plants. A compost of fibry loam, peat, and sand will suit it admirably, and rather firm potting is essential. Efficient drainage must also be provided, and careful watering is of the greatest importance.

## KEEPING GRAPES AT FLOORS.

FIGURE 5, in your issue of January 12th, admirably illustrates for what a trifling sum, and with a little tact, a good Grape room might be made. When Mr. M'Kellar took charge of Floors Gardens about eleven years ago there was no Grape room on the place, and advantage was taken of a disused and somewhat dilapidated room in a bothy by having it fitted up with shelves as your illustration shows; and I can corro-



borate all your correspondent says about being able to keep Grapes in it until June. It used to be the practice of Mr. M'Kellar to send old and new Grapes to the table together during the latter part of May, and I have seen Grapes hanging on it plump and sound as late as the 22nd of June.

The room has a lean-to roof, with a north aspect, and being at the back of a late Peach case on the ground floor enables it to be kept very cool, and forming altogether an excellent place for keeping late Grapes in. I fancy, however, Mr. M'Kellar would smile to himself as he read your correspondent's letter detailing "the plan I adopt" of keeping Grapes, he having had the room fitted up, and for a number of years so successfully kept late Grapes in it.—N. F. BARNES, *Eaton Gardens*.



#### FRUIT FORCING.

**Vines.**—*Earliest Forced in Pots.*—These must be pushed ahead to have the Grapes ripe in March. White Frontignan is fit for use first, because it is richer flavoured than the "Sweetwater" Grapes, and colours quickly. Foster's Seedling and Black Hamburgh, though apparently ripe, require a few days to mature after being coloured, otherwise the Grapes are harsh in flavour. Thin the bunches rather freely to induce fine berries, not, however, going to the extreme of making them loose. Maintain a temperature of 65° at night when the Grapes are swelling, falling 5° on cold mornings, but get the heat up early in the day to 65° or 70° on cold days, and 5° more when mild, increasing the ventilation from 70° with sun heat to 80° or 85°. Close early in the afternoon, and if the temperature rise to 85° or 90° after closing, and the atmosphere is humid, the Grapes will swell rapidly. Damp the surfaces also in the early part of the day and before nightfall when the weather is bright. Afford copious supplies of liquid manure, and sprinkle a little of the following mixture on the surface of the top-dressing of loam or manure:—three parts bone superphosphate, two parts powdered saltpetre, and one part ground gypsum, all dry and well mixed, continuing the application until the Grapes change colour for ripening.

*Earliest House.*—Permanent Vines are ruined by hard forcing, and remunerative returns can only be had from full and perfect crops. The Vines started at the beginning of December will now require attention in tying the shoots and stopping them one or two joints beyond the show of fruit where the space is limited, the axillary or lateral growths below the bunch being removed, except those from the two lowest joints, which, with those above the fruit, should be stopped at the first leaf and to each subsequent one as made. Allow no more bearing shoots to remain than will admit of space for the full exposure of the principal leaves to light and air; also the laterals, for their power of elaborating the food supplies is proportionate to their development and advantages. The laterals also should have a fair shade of light, not allowing them to interfere with the main leaves, yet moderate lateral extension is essential to root activity.

Where the Grapes are in flower the temperature should be maintained at 65°, and 5° more for Muscats by artificial means, and 10° to 15° advance from sun heat. Sweetwater and Muscat varieties should have the points of the bunches drawn to the light, assisting fertilisation by shaking the Vines every day or go over the bunches carefully with a camel's-hair brush, and varieties that do not afford pollen freely should have it taken from other sorts, and this dusted over the stigmas after the bunches have been brushed over, so as to remove the "caps" that frequently adhere to the anthers and stigmas. A constant circulation of rather dry warm air is highly advantageous in securing a good set.

Thinning should commence directly the Grapes are set, so as to get as much size in those remaining as possible, but shy setting varieties must not be thinned until the properly fertilised berries can be distinguished by their taking the lead in swelling, as they may when the size of small peas. Great care is necessary in ventilating at this season, providing air in moderate quantity, commencing early (a little at a time) so as not to reduce the temperature, only to prevent its rising too suddenly and too high. Afford a due supply of water or liquid manure to inside borders, never less in temperature than the mean of the house.

*Houses Started at the New Year.*—The Vines are breaking freely and strongly, and require syringing on fine afternoons and damping exposed surfaces in the morning and afternoon, so as to maintain a genial condition of the atmosphere. Avoid a very close saturated atmosphere, as it only provokes the emission of aerial roots from the rods, and these weaken rather than strengthen the Vines. Increase the temperature to 55° at night and 60° to 65° by day, and to 75° from sun heat, gradually advancing the heat with the growth so as to have 60° at night by the time the Vines are in leaf and 5° to 10° more by day. Ventilate carefully and in accordance with the state of the weather. Let the borders be properly moistened, not, however, making them sodden by needless waterings, for that hinders root action, and its effects are frequently seen in shanked Grapes.

*Houses to Afford Ripe Grapes in July.*—These must now be closed, and the house started not later than the beginning of February

to have the Grapes fit to cut early in July. If the borders are partly inside and partly outside the house the latter need not be covered with any protective material, but when the roots are all outside enough leaves or litter should be employed to prevent the soil freezing, as we have found it do in February to a depth of 6 to 8 inches, and the Vine foliage flag in consequence of the roots not affording proper supplies of sap. Outside stems must also be well bound with dry haybands, for if these get frozen the crop will probably collapse in the embryo state. Syringe the rods two or three times a day, depressing young canes to the horizontal line or lower, and maintain a night temperature of 50°, and 5° more by day artificially, with 65° from sun heat. Water inside borders repeatedly if necessary to bring them into a moist condition, for though fresh rootlets are not pushed until the Vines are in growth moisture is essential to the transformation of the stored matter in the Vines into sustenance.

*Late Houses.*—Gros Colman is the noblest berried and Gros Guillaume the largest bunched black Grapes, and to have them really good in quality the Vines require to be started by the middle of February to early March, as they not only need more time than late varieties generally to ripen, but it is essential that they have the full benefit of the spring and early summer sun to develop their growth, and the last two months of summer to perfect their crops. The wood then gets well ripened, and the fruit being thoroughly finished, these are the noblest black Grapes extant. Complete all pruning, dressing the Vines, and cleansing late houses as soon as possible.

Look over Grapes in the store-room occasionally for decayed berries, replenishing the bottles with clear rain water as required. Avoid fire heat as much as possible, affording air to prevent an accumulation of moisture, and maintain an equable temperature of 45°.

*Raising Vines from Eyes.*—These may now be inserted in pots or pans. Select firm, well-ripened wood, making the cuts clean, and insert the buds, eye upwards, in any light friable compost, say fibrous loam two parts, and one part leaf soil, covering them about half an inch deep with a little silver sand under and about the cutting. Pieces of turf about 3 inches square and deep, hollowed an inch deep in the centre on the reverse side, the eyes inserted, one in each turf, with sandy soil, and plunged in a bottom heat of 80°, soon become rooted, and when they have made two or three leaves each, can be placed singly in 6-inch pots, the breaking of the fibrelets outside the turf causing the emission of numberless fibres. This is a better plan than removing the young canes from pots or pans.

*Cut-back Vines.*—Those raised from eyes last spring, and which are not of a strength for fruiting or planting, should be cut back to an eye or two as near the surface of the soil as possible, dressing the cuts with best French polish, and placing the Vines (not later than early February) in a house with a temperature of 60° to 65° at night, and 70° to 75° by day, and when they have grown 2 or 3 inches shake them out and repot. Turfy loam torn up with the hands rather roughly, with a fifth of horse droppings, and a sixth of old mortar rubbish, mixed, adding a 9-inch potful of charcoal to every 3 bushels of compost, and a similar proportion of wood ashes, with a quart each of soot and Thomas' phosphate powder (basic slag) form a capital compost for pot Vines, further aid being given by top-dressings of the mixture previously advised for fruiting Vines in pots, phosphatic, potassic, and calcic elements—the chief requirements of Vines—being best applied when they are in growth. Pots 6 or 7 inches in diameter are large enough for ordinary cut-backs, unless large, when they may have 9-inch, and from these they can be transferred to the fruiting pots. A slight bottom heat is an advantage for these Vines, but it is not essential, a genial condition of the atmosphere being maintained by sprinkling the house and Vines two or three times a day.

**Cherry House.**—Cherry trees foster aphides of the worst kind, and unless a sharp look out is kept, and they are destroyed directly they appear, the pests get into the trusses of bloom and spoil all chances of a crop. Take, therefore, every care to have the trees perfectly clean before the blossoms appear. Cherry trees also are soon ruined by too much heat in the early stages of their growth, especially when the ventilation is indifferent, as it never must be. Commence ventilating at 50°, allowing an increase of 15° with proportionate ventilation, but only from sun heat, closing the house at 50°, 45° being sufficient by day artificially, and 40° at night. Water will not yet be required at the roots where the roof lights have been removed and the borders properly moistened through to the drainage, but there must not be any deficiency, giving a supply when necessary. Trees in pots require due supplies, avoiding extremes. Do not keep the trees constantly dripping with moisture, but syringe only on fine days and early, and damp the surface of the borders whenever they become dry.

Top-dress the borders with partially decayed lumpy manure about 1 inch thick, and when the roots become active near the surface apply a dressing of superphosphate, with a little nitrate of potash—say, two parts dissolved bones and one part powdered saltpetre, with one part of ground gypsum, mixed, applying 4 ozs. per square yard, every three weeks. Be careful, however, with the saltpetre, as too much nitrogenous matter causes a flush of growth, and, unless the fruit has stoned, it is cast in showers. Nitrate of soda for the same reason must be used very carefully. Trees in pots should be surface-dressed with turves, and be sprinkled occasionally with Thomas' phosphate powder, which not only contains phosphoric acid, but a large percentage of lime in a fairly available form, and this assists Cherries in stoning.

**Strawberries in Pots.**—Adverse weather has only retarded the early plants, which have thrown up the trusses strongly, especially John



Ruskin, La Grosse Sucrée, and Vicomtesse Hericart de Thury, the first being a splendid pollen bearer, therefore useful for fertilising the others, which is best done with a camel-hair's brush lightly drawn over the central part of the flower when coated with pollen. The small flowers should be removed, and the fruit thinned early, so that those left may have the advantage in swelling. This is best effected in a brisk and moderately moist heat—say, 60° to 65° or 70° artificially, with 10° to 15° advance from sun heat; and when the fruit commences to ripen a drier atmosphere will improve the colour and flavour of the fruit. Liquid manure should be given freely, but not overstrong, and it must be kept from the fruit, which is best raised on forked sticks well up to the light. Plants advancing to the flowering stage must not be hurried, 50° to 55° being ample by artificial means, and 60° to 65° with sun heat, and free ventilation. Another batch of plants should be introduced between now and the beginning of February, introducing some of the early varieties along with the second early sorts, so as to secure the succession unbroken. La Grosse Sucrée and Sir Harry are excellent early varieties, the latter having the rich mellow flavour and high colour so much esteemed by many palates. President and Sir Joseph Paxton also please most tastes, and Sir Charles Napier is brisk in flavour and brilliant in colour, with plenty of size; whilst Noble, with Auguste Nicaise, produce enormous fruits and heavy crops.

Every care should be taken to have the plants perfectly free from aphides before they come into flower. Scrutinise them closely in all stages preceding the flowering, and upon the first appearance of the pests fumigate, repeating so as to thoroughly annihilate them. If this is done before the flowers open there will be little trouble, if any, afterwards, and it is better that way, as fumigation dries the skin of the fruit, causing it to become brown, and the Strawberries rarely swell well afterwards, but crack or ripen prematurely, and are worthless.

**Cucumbers.**—Seedlings from the sowing made at the beginning of the month should be earthed up, and when that may not longer be done they may be transferred to larger pots or be planted in their fruiting beds, following generally the instructions before given for Melons, using the soil named hereafter. If the seeds were sown in frames lining the beds must be attended to, with mats over the lights at night. The fruiting bed must now be made, or it may be that the seeds of Cucumbers or Melons are not sown before February, which is, all points considered, much the best plan where reliance must be placed solely on fermenting materials. The materials—two-thirds Oak, Beech, or Spanish Chestnut leaves and one-third stable litter—having been thrown into a heap, moistened if dry, turned in a week and again moistened, and again turned, will be in a fit state for forming the bed. Choose a site for a bed with a southern aspect having shelter from the north, as that of a hedge or wall, and higher than the surrounding ground level. If the site is low place some Pea sticks so as to keep the material from being saturated by the wet, and mark out the bed a few inches larger only than the size of the frame. Beat the manure and leaves well down with a fork as the work proceeds, making the bed about 5 feet high at the back and 4 feet 6 inches in front, which will allow for settling, which it will do about one-third. A few Pea sticks placed across and along the bed at intervals prevent overheating and admit of the heat from the lining being conveyed to the interior of the bed.

It is an excellent plan to use frames with double sides, formed by placing inside a lining of quarter-inch boards, less in depth by 9 inches at the back and 6 inches in front than the depth of the frame, kept an inch from the box by nailing strips of board upright on the inside of the box, so as to form an inch cavity all round the inside, and thus top heat is furnished by means of linings against the sides of the box. The bed should be brought up perpendicular, and the frame put on, which will bring up the heat in about a week. Level the surface, replace the frame, and, if the bed is to be used for raising plants, put in sufficient manure to raise the inside to within 4 inches of the top of the inner frame or cavity, placing sawdust, dry leaf soil or spent tan on the manure for plunging the pots in. To raise the plants half fill 3-inch pots with light, rich, moist soil, place one seed in the centre of each, and cover about half an inch with fine soil. Place a pane of glass on each pot, so as to hasten the germination, and remove it as soon as the seedlings appear. The space left in the pots can be occupied with soil as the plants advance and require top-dressing, which is better than potting them. The plants from a sowing made early in February in the manner described will be fit for planting early in March, and will afford a supply of fruit nearly as early as those from seed sown early in January.

If seed has been grown early in January the plants will be fit to plant early in February, forming the hotbed, as before advised, for the seedlings, only using manure for levelling the surface of the bed, and forming a ridge or hillock of soil in the centre of each light about 10 inches deep, and with a flattened top of that width across, the surface of the bed being covered lightly with soil. For planting, see advice given for Melons. The lights will need mats over them at night, and linings must be given from the bottom of the bed so as to maintain a proper bottom and top heat. A suitable soil for Cucumbers is fibrous loam inclined to be light rather than heavy, good warp or alluvial soil answering, perhaps, best of all, the loam being cut about 3 inches thick and laid up so as to reduce the turf. To this, broken up moderately small, may be added a fourth in equal proportions of old mortar rubbish and charcoal thoroughly incorporated. We prefer fresh turfy loam subjected to a gentle charring over a wood fire, but only heating so hot that it cannot be handled with the hands, and this not

only kills the herbage but destroys the germs of every disease or pest, as well as grubs and everything alive. It is the best preventive of the nematoid worms—the eelworms that produce the Cucumber and Melon disease. Manure is best avoided, as the plants can be fed to any extent by liquid applications.

**Winter Fruiterers.**—If the plants show signs of exhaustion, remove the surface soil of the bed, and supply fresh three parts loam and one decayed manure and leaf soil, with a quart of wood ashes and a good handful or two of soot to each bushel of compost. Fresh roots will soon ramify through the fresh compost, and then they will take manure water beneficially. Keep the growths tied to the trellis, cut out exhausted growths, and encourage young shoots in their place.

#### PLANT HOUSES.

**Pelargoniums.**—Young plants that have been kept perfectly cool and have not been pinched since the end of September may be transferred into their flowering pots. A compost of good loam, one-seventh of decayed manure, and sand will suit them. Press the soil firmly into the pots, and water carefully until the plants are rooting freely in the fresh soil. Place them on a shelf close to the glass in a cool structure, where they can enjoy abundance of air. Those for later flowering may have the points of their shoots removed, and the plants repotted if necessary. Remove the points of late-rooted cuttings and place into 4-inch pots; about one-fifth of leaf mould may be employed for these. Old plants that were cut back late and have broken thickly disbud if the shoots are too numerous. Water carefully, but do not allow the soil to become too dry, or else the active roots will be liable to suffer. Watch for aphides, and destroy them as soon as they appear by fumigating with tobacco smoke or some of the various materials manufactured for the purpose.

**Zonal Varieties.**—Maintain a dry atmosphere and a temperature of 60° for double and semi-double kinds in flower. If they need feeding it is better to apply artificial manure to the surface than administer liquid stimulants frequently. Keep plants that have done flowering on the dry side to harden their wood ready for shortening back. Any dwarf bushy plants will flower profusely if introduced into gentle warmth. Plants that have been kept dry for some time cut back and placed in warmth to break, and those that have been kept slowly moving during winter, may be placed into their flowering pots. A temperature of 50° will be ample at first. Those for later flowering may have the points removed. For successional flowering cuttings may be inserted in thumb pots singly, and placed on shelves in a temperature of 60°.

**Freelias.**—Where a good batch has been brought forward in gentle warmth they may now be divided into two, placing the later ones in a structure where the temperature does not fall below 45°. The remainder of the stock may be allowed to grow on under cool conditions.

**Bulbs of Various Kinds.**—Now that there is a favourable break in the weather go over at once the bulbs that are plunged in ashes, and remove to cool quarters all that are ready. Whether placed in frames or cool houses admit light to them with care at first until they turn green, or else their foliage will be injured. Keep them perfectly cool for the present; do not attempt to excite them into growth in their present condition. The soil about their roots must not be allowed to become dry, or the atmosphere in which the plants are placed.

**Clerodendron Balfourianum.**—Start one or more plants under the conditions advised for Allamandas. These plants should not, however, be repotted before they start into growth. They do well in the same pot for several years providing they are top-dressed with rich material, and liberally assisted by stimulants during the season of growth. Plants that need larger pots need only have loose surface soil removed, and the drainage from the base. Before potting see that the old ball is in an intermediate state for moisture, and the new soil should be pressed firmly round it. Do not keep plants raised from cuttings last year that have not yet completed their period of rest in too low a temperature, or they will fail to start into growth. A lower temperature than 55° is not safe.

**Crotons.**—Where brisk moist heat can be maintained good well furnished heads that need re-rooting may be carefully notched and mossed. They will soon form roots ready for taking off, and thus have a long season's growth before them. Young plants that have been kept in small pots may, if slight bottom heat can be given, be potted at once; but where plenty of heat cannot be maintained potting must be delayed for a time. At this season of the year the plants should be potted in the houses in which they are to be grown, and the soil must be thoroughly warmed.

**Dracaenas.**—Young stock should be potted at once if they need more root room. It is a great mistake to allow these plants to become root-bound before they are placed into larger pots. Repot plants that are in a healthy condition and need such attention in the course of the next week or two. It is useless to repot any that show signs of having been checked, they never grow freely again. Any damaged plants may be used for grouping, and the stems afterwards cut up for stock. Roots of these plants may be cut up if the stems have been well ripened and brisk bottom heat can be afforded, if not they are very liable to decay early in the season.

**Plumbago rosea.**—This, and its variety coccinea, may be cut well back as the flowers fade. The plants must be kept in heat to induce them to break into growth, so that cuttings can be obtained for another year. Syringe these plants freely, for they are very liable to be attacked by thrip.



# THE BEE-KEEPER.

## APIARIAN NOTES.

### THE LANARKSHIRE HIVE.

I AM sending a piece of comb, would you kindly say whether it is affected by foul brood or not? My Lanarkshire hives have passed through the winter well so far, and bee-keepers having these hives covered as you direct need not fear the keenest weather. I took a first prize for sections worked on one of my Lanarkshire hives in strong competition, beating all the Association.—G. R.

### EARLY BROOD.

By post on the morning of the 13th a small parcel, containing a piece of brood comb, containing eggs, larvæ, and ripe brood, came with the above note. The brood is healthy, but as some of the cells contain dead adult bees this suggests the hive was either short of honey, or the bees, intent on the care of the young during the extreme cold, have been overcome with the low temperature. This case of breeding on the shortest day, when the mercury was nearly at zero, simply confirms our experience and teachings.

### THE WINTER AND PUNICS.

The sixth day of January had the lowest temperature for the season, being from 3° to 5° above zero here, but the air was dry and the bright sunshine was tempting to the bees. The Punics were the first to make their appearance. There is scarcely a young bee in our hives, and therefore, according to some modern theorists, these bees ought to have been dead long ago; they are not only living, but extra strong, without a spot of voided matter on or about their hive, and very few dead bees to be seen. This is almost wonderful after such a protracted period of keen frost.

### CURES FOR FOUL BROOD.

These have for some time past been advised very much upon the same lines as charms against witchcraft, frightening that away which had no existence. Some of them remind one of the doctor's bill sent to the poor widow whose husband had been under his care, "To professional attendance in curing your husband." Some persons of my acquaintance on asking for a cure for foul brood were told to "burn bees and hives;" and this though a charm is alleged to be found that will keep everything sweet and pure—tarred paper. I am truly sorry for persons troubled with blight amongst their bees, and who cannot find a remedy.

I have tarred my hives both inside and outside for a quarter of a century. One of the worst cases of foul brood I have seen during the past decade was in a straw hive with a wide opening in the crown covered with tar felt, and this by a sheet. Common sense taught me long ago to avoid impervious crowns, as described in one of my first articles to this Journal between 1860 and 1862, at the same time as "Langstroth's" article appeared on the quilt. That was many years before Abbott claimed the honour of introducing it.

In order to keep hives free from foul brood they must be airy but without draught, and all the perspiration of the hive carried off; we must, therefore, study to keep the interior of the hive warm yet fresh, and prevent overcrowding with the consequent overheating. Should the plague appear drastic measures must be taken to stamp it out, not by either burning the bees or hives, but by disinfecting the one and putting the others through the purgatorial process. Trust not to preventives in the shape of nostrums, which have proved failures even in the hands of some of our speculative sages, and remember that the moment the volatile principles and essential oils are evaporated all the healing virtues are dissipated in the ethereal regions; besides, the fumes gas or vapour of the so-called cures, to be strong enough to suppress the germs will kill every bee in the hive or expel them from it. It is foolish to allow a diseased cell to remain in the hive in the hope of the nostrum destroying the disease germs. Is it not peculiar that the advisers of certain cures for foul brood are also advisers of burning hives and bees to accomplish the object in view?

If foul brood is suspected and found in any hive now is the best time to separate the bees from the diseased combs and start them afresh as if forming a new colony. It will be well to begin feeding whenever the bees have had a thorough flight. It is a common practice with some bee-keepers, and so successful that I can strongly recommend it.—A LANARKSHIRE BEE-KEEPER.

### TRADE CATALOGUES RECEIVED.

Carter & Co., High Holborn.—*Selected List of Tested Seeds.*

W. Clibran & Sons, Oldfield Nurseries, Altrincham.—*Vegetable and Flower Seeds.*

W. Baylor Hartland, Cork.—*Year Book of Seeds.*

Dobie & Mason, Dale Street, Manchester.—*Reliable Seeds.*

W. Fromow & Sons, Chiswick, London, W.—*Vegetable and Flower Seeds.*

Harrison & Sons, Seed Growers, Leicester.—*Vegetable and Flower Seeds, &c.*

Hogg & Wood, Coldstream, N.B.—*Vegetable and Flower Seeds.*

John Jefferies & Sons, Cirencester.—*Seeds and Bulbs.*

Messrs. McDougall Bros., 10, Mark Lane, London.—*List of Specialities and Testimonials.*

Pape and Bergmann, Quedlinburg.—*Flower and Vegetable Seeds.*

George Phippen, Broad Street, Reading.—*Garden Seeds.*

Arthur Robinson, Leadenhall Street, London.—*Garden Seeds.*

Ant. Roozen & Son, Overveen, Haarlem, Holland.—*Gladioli, Dahlias, Vegetable and Flower Seeds.*

W. Rumsey, Joyning's Nurseries, Waltham Cross, N.—*Vegetable and Flower Seeds.*

T. & R. Thyne, 83, St. Vincent Street, Glasgow.—*Garden Seeds.*

J. R. Tranter, Henley-on-Thames.—*Vegetable and Flower Seeds.*

Van Meebeek and Co., Hillegom, Holland.—*Bulbs, Plants and Seeds.*

Conway G. Warne, Royal Potteries, Weston-super-Mare.—*Pottery, Terra Cotta.*



## TO CORRESPONDENTS

\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Labels (H. E. M.).**—We cannot give the precise information you require at present, but will with pleasure endeavour to obtain it with the view to its publication next week.

**Double Primulas (E. Ham).**—The trusses and blooms are very fine examples of the old double white strain—a distinct improvement on the type. Your letter cannot be inserted this week.

**Bambusa Fortunei variegata (L. B. G.).**—We have found this dwarf variegated Bamboo perfectly hardy, and it is so distinct that we cannot conceive of any other variety being mistaken for it.

**Staphylea colchica (T. W.).**—Many persons beside yourself find this shrub useful for forcing, and we are glad to note that "the pendulous sprays of bloom and foliage remain fresh and good for several days after being cut." If you placed sprays in the box sent they must have escaped during transit, for after a careful search they could not be found among the Chrysanthemums.

**Variability of W. W. Coles Chrysanthemum (M. M.).**—This variety appears very prone to variation. We have had many blooms more or less yellow, but the one you send is the clearest we have seen. Whether the colour will be retained in plants raised from cuttings can only be determined by experience, and whether a yellow form would possess any great value is somewhat problematical.

**The Loofah or Vegetable Sponge (J. Foster).**—This is the fruit of *Luffa cylindrica*, a cucurbitaceous plant, native of the East. The plant is climbing, like most of the Cucurbits, and attains a height of 5 to 6 yards, supporting itself by the aid of tendrils. We are not surprised that the Sooly Qua Cucumber deprived of its skin when the seeds are perfectly ripe, carefully washed and dried, makes a very fair specimen of "vegetable Sponge."

**Double Italian Hyacinths (Enquirer).**—The flesh-tinted Double Italian Hyacinth is grown by a few persons, and we have seen a considerable "batch" of it in the establishment of a grower of flowers for market, but the variety is not a general favourite, or bulbs of it would be offered in most trade catalogues. We do not know of dealers who make a speciality of the Double Italian, but the vendor who sent bulbs of it mixed with those of the single flowered variety could no doubt supply both separately if requested to do so.

**Tomatoes and Mushrooms (J. F. S.).**—We are not justified in giving the addresses of correspondents who do not send them for publication, and we know that some contributors purposely omit their addresses to prevent letters being sent to them. One gardener had fifty in one week, very few containing stamped directed envelopes, and he felt therefore that he was subjected to expense he had no right to bear if he answered the letters, and if he did not was open to the charge of discourtesy. We will consider the question of forwarding your letter to our correspondent.



**Collecting Orchids (Albion).**—We have no work on Orchid collecting. We cannot with certainty answer your other question, but you can obtain direct information by writing to the Curator, Royal Gardens, Kew.

**Beet for Size and Quality (E. T. H.).**—The variety you name as too small produces under good culture roots large enough for most persons. Nutting's Dwarf Red, which has many synonyms, is medium in size, rich in colour, tender, and well flavoured. If you want a large Beet of dark colour and fine flavour some of the selections of Whyte's Black would meet your requirements, Veitch's Improved Black being a fine form; but it must not be sown too early (say not before May) or it is liable to become too coarse for winter use, though when sown early it is good for autumn use. Pragnell's Exhibition has handsome medium sized roots and deep crimson flesh. It is excellent in quality and flavour when cooked, and is one of the best Beets for general purposes.

**Vines Unsatisfactory (Woodfoot).**—The roots are simply destroyed by some corroding substance which may result from a close, soapy, rich soil deficient in gritty matter, consequently inert through want of oxidation. The only remedy is to provide and mix such materials with the soil as will correct its sourness, and prevent its settling into a close mass again. The drainage must be efficient, concreting the bottom of the border if necessary, laying drains with a proper fall and outlet, and 1 foot in depth of rubble drainage, the roughest at the bottom and the finest on the top. The soil may have one-fourth of calcareous gravel mixed with it, or one-sixth of old mortar rubbish freed of pieces of wood, with two parts of drift sand, and to every square yard of border, of 2 to 2½ feet depth, add and mix with it 28 lbs. of Thomas' phosphate powder (basic slag). Thus renovated, the border may be as good as if fresh loam were procured if the needful supplies of phosphatic, potassic, and calcic elements are provided by surface dressings.

**Making a Pond (S. D.).**—The excavation should be made 1 foot 6 inches deeper and 3 feet wider and longer than the intended pond, and the sides should incline one-half the height or depth. The bottom and sides must be lined with clay, put in in layers of 6 inches in thickness, rammed well down and puddled, so as to form an impervious mass; a coating of gravel may be placed on the surface of the clay and rammed into it. As to the cost, that depends entirely upon the easy means or otherwise of procuring the clay, the distance it has to be carted, and the rate of transit and labour. Another way of making a pond is to excavate sufficiently to admit of a 9-inch thickness of rubble at the bottom and sides of the intended pond, and provide a drain below that if the subsoil is not naturally drained. The rubble may consist of brickbats or stone, broken up to the size of road metal, roughest at the bottom and finest at the top, yet the fine particles must be sifted out, say with an inch sieve, and this material may be used for concrete mixed with one-third of Portland cement, formed into a "running" mixture, and the rubble run with it. This will leave a rough surface, which may be coated 3 inches thick with cement concrete, formed of sandy unbinding gravel and best Portland cement in equal proportions, forming into a soft running mortar-like mass; this brushed over with a half-worn birch broom, gives a pleasing rough surface. The expense of this depends entirely upon the cost of transit of the materials.

**Dressing Manured Ground with Lime (Anglo-Scot).**—There is no practical objection to dressing the ground with lime. The lime will hasten the decay of the organic matter, and that means ammonia. This may be volatilised and lost, or it may be "fixed" by the alumina and iron of the soil; but it is possible that the lime will act in a beneficial manner by giving activity to the micro-organisms (bacteria) by which the ammonia is transformed into nitrites, and those by similar organisms into nitrates—that is, the nitrogen of the soil becomes food for plants, to wit, nitrate of calcium (lime). We have used lime and soot as a preventive of grub in Onions, Carrots, and other crops for many years, and always beneficially. About half a bushel of quicklime was used per rod (30½ square yards) just before the site was got ready for sowing, spreading on the ground while hot, lightly pointing in, and mixing in the upper 6 inches of soil. This makes quick work of worms and slugs, and the decay of the manure is hastened for the benefit of the crops, so that they are flushed at the start and not late in the season. This is important, for when Onions continue growing instead of forming bulbs they are not satisfactory. The seeds were covered in the drills with wood ashes duly moistened, and when the crops were thinned a peck of soot per rod was strewn on them while they were damp with dew. This rendered the plants obnoxious to the flies, so that their eggs were not deposited on them, and the crops benefited by the soot as a manure. Soot is a carbonaceous substance, therefore supplies other elements besides nitrogen (equal to 3.50 per cent.). Use the lime, say half a bushel per rod, as it will assist in the manufacture of nitrates for the benefit of the crops. Pliny, Virgil, and Columella note (nearly 2000 years ago) the benefit to be derived from lime as a manure for Cabbages, Radishes, and fruit trees in rich soils, and Theophrastus, at an earlier date, was well aware of the advantageous use of wood ashes, the effects being similar to that derived from nitrum or saltpetre, though the nitrum of the ancients was probably natrum (nitrate of soda).

**Names of Fruits.**—Notice.—Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not

necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (Biddles & Co.)—The Apple is Gloucestershire Costard, a fine fruit. (W. J.).—We can scarcely understand the two fruits coming from the same tree. The smaller symmetrical highly coloured fruit is, we think, Herefordshire Beefing. (Pershere).—Apparently rather small fruits of Bess Pool. (F. G.).—No. 1 is possibly local, and bears some resemblance to Queen Caroline, though two of the fruits are too conical for that variety. 2, Golden Reinette, fine specimens. We have a box containing several Apples without any letter referring to them, and some of the fruits are decaying.

#### COVENT GARDEN MARKET.—JANUARY 25TH.

No alteration. Trade slow.

##### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, half sieve .. ..	1	0	to	3	Lemons, case .. ..	10	0	to	15
" Nova Scotia, per					Oranges, per 100 .. ..	4	0		9
barrel .. ..	12	0		17	Peaches, per dozen .. ..	0	0		0
Cobbs, Kent, per 100 lbs.	0	0		125	St. Michael Pines, each ..	3	0		6
Grapes, per lb. .. ..	0	6		2					

##### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Kidney, per lb. ..	0	6	to	0	Mustard and Cress, punnet	0	2	to	0
Beet, Red, dozen .. ..	1	0		0	Onions, bunch .. ..	0	3		0
Carrots, bunch .. ..	0	4		0	Parsley, dozen bunches ..	2	0		3
Cauliflowers, dozen .. ..	2	0		3	Parsnips, dozen .. ..	1	0		0
Celery, bundle .. ..	1	0		1	Potatoes, per cwt. .. ..	2	0		5
Coleworts, dozen bunches	2	0		4	Salsify, bundle .. ..	1	0		1
Cucumbers, dozen .. ..	8	0		12	Scorzonera, bundle .. ..	1	6		0
Endive, dozen .. ..	1	3		1	Seakale, per basket .. ..	1	6		1
Herbs, bunch .. ..	0	3		0	Shallots, per lb. .. ..	0	3		0
Leeks, bunch .. ..	0	2		0	Spinach, bushel .. ..	3	0		3
Lettuce, dozen .. ..	0	9		1	Tomatoes, per lb. .. ..	0	2		0
Mushrooms, punnet .. ..	0	9		1	Turnips, bunch .. ..	0	3		0

##### PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to	12	Ficus elastica, each .. ..	1	6	to	10
Azalea, per dozen .. ..	24	0		42	Foliage plants, var., each..	2	0		10
Chrysanthemums, per doz.	6	0		9	Hyacinths, dozen pots ..	8	0		12
Cineraria, per dozen .. ..	8	0		12	Lycopodiums, per dozen ..	3	0		4
Cupressus, large plants, each	2	0		5	Marguerite Daisy, dozen ..	6	0		14
Cyclamen, dozen pots .. ..	9	0		18	Myrtles, dozen .. ..	6	0		9
Dracæna terminalis, dozen	18	0		42	Palms, in var., each .. ..	1	0		15
" viridis, dozen .. ..	9	0		24	" (specimens) .. ..	21	0		63
Euonymus, var., dozen .. ..	6	0		18	Primula, single, doz. pots	4	0		6
Evergreens, in var., dozen	6	0		24	Solanums per dozen .. ..	9	0		12
Ferns, in variety, dozen ..	4	0		18	Tulips, dozen pots .. ..	6	0		9
Ferns (small) per hundred	6	0		8					

#### AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

##### Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0		8	Narciss, var., French, dozen	3	0	to	6
Azalea, dozen sprays .. ..	0	6		1	bunches .. ..	3	0	to	6
Bouvardias, bunch .. ..	0	6		1	Orchids, per dozen blooms	3	0		12
Camellias, doz. blooms ..	1	6		4	Pelargoniums, 12 bunches	8	0		12
Carnations, 12 blooms ..	2	0		3	Pelargoniums, scarlet, doz.	6	0		9
Chrysanthemums, doz. bls.	1	6		4	bunches .. ..	0	4		0
Chrysanthemums, dozen	4	0		12	Poinsettia, per bloom .. ..	0	4		0
Eucharis, dozen .. ..	4	0		6	Primula (double) 12 sprays	1	0		1
Gardenias, per dozen .. ..	12	0		24	Roses (French), per doz. ..	2	0		6
Hyacinth, Roman, 12 sprays	0	6		1	" boxes, 100. .. ..	5	0		8
Lilac, white, French, per	4	6		6	" (indoor), dozen .. ..	2	0		4
Lilium longiflorum 12	9	0		12	" Red, per doz. blooms..	2	0		4
blooms .. ..	9	0		12	" Tea, white, dozen .. ..	1	6		3
Lily of the Valley, dozen	0	6		1	" Yellow, dozen .. ..	4	0		6
sprays .. ..	0	6		1	Tuberose, 12 blooms .. ..	1	0		1
Maidenhair Fern, dozen	6	0		9	Tulips, dozen blooms .. ..	1	0		3
bunches .. ..	3	0		6	Violets, Parme, French, per	7	0		10
Marguerites, 12 bunches ..	3	0		6	bunch .. ..	4	0		6
Mignonette, 12 bunches ..	3	0		6	Violets, Czar, French, per	4	0		6
Mimosa, French, per bunch	1	0		1	bunch .. ..	3	0		6



#### THE PREVENTION OF POTATO DISEASE.

NOT always is success the best guide to follow; failure, if only we ascertain its cause, shows us what to avoid, and if its lessons are rightly applied leads to success. In the report of the Woburn experiments for the prevention of the Potato disease by Dr. Voelcker in the new number of the Journal of the Royal Agricultural Society, we have a remarkable instance of this. The sorts under treatment were—Early kinds: Myatt's Ashleaf, Early Puritan, Early Rose, Beauty of Hebron. Medium kinds: Dalmahoy, White Elephant, Reading Giant. Late kinds: Emperor, Schoolmaster, Victoria. The first dressing with bouillie bordelaise was done on June 30th, the earlier kinds having grown sufficiently by then; the other varieties were



dressed for the first time on July 6th and 7th, and the whole were finished before any sign of disease appeared.

By the middle of August, we are told, the early kinds were quite ready to take up. This was done August 10th to 13th, the Dalmahoy's of the medium varieties being also taken up on August 16th. There were no diseased tubers in either of the five sorts, and so far the trial was entirely successful. But on August 24th it was noticed that the dressing had for the most part been washed off the leaves of the remaining plots, and directions were given that the plants should be again sprayed. An interval of a week before this was done left the haulm exposed just when it most required protection, and on September 1st, when the second spraying was begun, disease became visible. It is, therefore, obvious that only up to the time of lifting the early sorts were the experiments conducted satisfactorily. Surely those who controlled the experiments should never have left the haulm from which the first dressing was washed without an immediate second dressing? The report says it was left undressed for a week, and for that reason we are bound to regard the experiments with the medium and late sorts as unsatisfactory. When the haulm attains its full height a change occurs in the epidermis of its foliage, which may be termed a softening, or the first stage of decay; it then becomes a suitable nidus for the resting spores of the disease fungus to lay hold of or become established in, the mycelium then runs through leaf and stem downwards into the tubers, which are more or less affected by it. The theory of disease prevention by means of bouillie bordelaise is a perfect coating of every part of the haulm with it; if the coating is imperfect at first, or becomes so subsequently while the haulm continues green, then the application of theory to practice is at fault, and the experiment untrustworthy.

It may be usefully noted here that, regarded as a test of the comparative value of the different sorts, it proved that for field culture the best Potato among the earlies was Beauty of Hebron, among the medium crops the Reading Giant, and of the late varieties Emperor. Beauty of Hebron is described as a "good early cropper; clean skin; shallow eye; very saleable." Reading Giant is a "good-looking Potato; very heavy cropper; clean thin skin; saleable." Emperor is a "very good cropper; clean skin; plant has very large tops; quite saleable." In bulk of crop Reading Giant was decidedly superior to all others, its weight of sound tubers per acre being upwards of 15½ tons. It is a Potato of excellent quality, which can be recommended for general culture.

Two kinds of bouillie were used, one consisting per acre of 20 lbs. of sulphate of copper, 20 lbs. of lime unslaked, and 100 gallons of water; the other of precisely the same quantities of copper, lime, and water, with an addition of 20 lbs. of molasses, under a suggestion of M. Girard of the syrup probably helping to retain the copper salt more firmly on the leaves, and thus rendering it less liable to be removed by rain. The idea proved entirely fallacious, no advantage whatever being derived from the addition of molasses, and other experiments tend to show that 20 lbs. each of sulphate of copper and lime to 100 gallons of water is the best mixture.

The report is somewhat contradictory, setting forth in one part of it how the whole of the crop of early kinds and one medium kind were taken up quite free from disease in the second week in August; and yet in another part saying that neither the ordinary bouillie bordelaise nor the bouillie bordelaise sucrée had an entirely preventive effect. We should say that certainly in the early kinds it had undoubtedly a preventive effect, for it was not till after the crop of them was taken up that the mixture was washed off any of the haulm, so that from June 30th till the haulm was decayed it was so well protected by the bouillie that disease germs could do no harm. If this view is correct, as we believe it to be, widely different results of experiments are easily accounted for. If the dressing acts as a shield to ward off disease,

to be really effective it must completely envelop every part of the haulm, there must be no flaw in it. From the first application till the decay of the haulm the shield must be intact, and then the disease may probably be prevented. The right time for the first dressing appears to be a matter for watchful experiment, too; if the dressing lessened the crop as it is said to have done in some instances, it was probably owing to some error of application.

#### WORK ON THE HOME FARM.

Instead of selling surplus corn at a loss it is used profitably for rearing and fattening live stock at the farm. A considerable quantity is required for poultry, of which the number has steadily increased till what with four fixed poultry houses, two at the farm and two others near gamekeepers' houses, and several portable ones on wheels, upwards of a thousand hens are kept. It is by separating them in batches of four or five score that they prove healthy and profitable. During the winter the portable houses are brought near the farm in different convenient enclosures, where they remain till spring, when they are drawn from one meadow to another, or about the park at intervals of a few weeks. By feeding close to each poultry house the fowls always keep to them for laying and roosting, unless they happen to be placed near a hedge, when a hen will occasionally make a nest that is easily found. Of pure breeds kept the most profitable are White and Coloured Dorkings, Game, and Minorcas. Excellent table birds are obtained by crossing Coloured Dorkings with Old English Game; the chickens grow quickly, have deep breasts, and compact yet thick bodies. For winter eggs Orpingtons are now generally preferred, and a cross between the White Leghorn and Langshan is much liked for the large supply of eggs which it affords, but we have a decided preference for White Dorkings, and depend entirely upon them for our supply of winter eggs.

Apart from a given number of bacon pigs, the number of sows kept and porkers reared has been regulated by the number of cows in the dairy herd in order that all skim milk might be used daily. We object strongly to an accumulation of milk and whey which becomes sour and unwholesome, and prefer using it soon after it comes from the dairy. The bulk of it now returned from the dairy at once as separated milk is fresher and can be kept longer than skim milk. Mixed with corn meal thinly for sows and porkers, thickly for pigs fattening for home use or for market, it forms the most nourishing food. Upon the principle of buying in a cheap market and selling in a dear one several more young Suffolk sows were purchased about a year ago; these had their second and third farrows of pigs during the year, and proved an excellent investment. By these and similar means corn is turned to much better account than if it had been sold at a price which precludes profit. We take care not only to feed well with it, but also to market well with the eggs, poultry, pork, butter, cheese, mutton, and beef which it helps to produce.

VINTON'S AGRICULTURAL ALMANAC for 1893 answers well to its title of "A Year Book for Farmers and Landowners," and further as abounding with "facts, statistics, figures, prescriptions, guidance, information—on crops, live stock, soils, implements, manures—for the estate, the farm, the farm house—the landlord, the tenant, and the labourer." To this summary of contents given on the first page of its cover it makes an entirely satisfactory response upon perusal. Tables are its leading feature; it also contains several interesting articles, and portraits of some men of note in the agricultural world.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

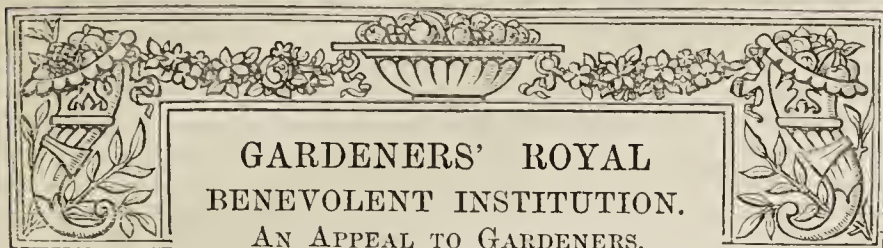
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1893.  January.	Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. 15	30.182	27.2	26.0	N.E.	33.1	32.0	26.1	54.3	22.7	—
Monday .. 16	29.964	30.0	29.4	S.	32.9	39.9	23.4	39.9	18.4	0.222
Tuesday .. 17	29.889	30.3	29.9	E.	33.0	35.6	29.5	36.0	28.8	0.122
Wednesday 18	30.140	35.0	34.5	W.	33.1	44.8	26.9	51.1	18.6	0.050
Thursday.. 19	30.452	40.0	39.2	E.	33.2	42.9	35.0	47.3	30.6	—
Friday .. 20	30.376	39.9	39.6	N.W.	33.2	42.8	36.1	54.9	29.2	—
Saturday .. 21	30.406	37.1	35.1	W.	33.2	43.0	33.9	59.0	27.1	0.046
	30.201	34.2	33.4		33.1	40.1	30.1	48.9	25.1	0.440

#### REMARKS.

- 15th.—Bright sunshine all day but cold N.E. wind.  
16th.—Almost continuous slight snow or sleet from 8 A.M., changing to drizzle about noon and to steady rain later, which ceased about 7 P.M.  
17th.—Dark and overcast early; slight drizzle, freezing at it fell, about 11 A.M., changing to sleet about noon and to snow at 1 P.M.; depth at 4.30 P.M., when it had practically ceased, three-quarter inch; slight drizzle or sleet in the evening.  
18th.—Wet from early morning till about 11 A.M.; fair after 1 P.M.; clear night.  
19th.—Overcast day; fine night.  
20th.—Overcast early; occasional sunshine after 11 A.M.; bright sunny afternoon.  
21st.—Cloudy early; fine and sunny from 10.30 A.M. to 1 P.M.; cloudy afternoon.  
A very ordinary January week; temperature not far from the average, but the soil remains cold.—G. J. SYMONS.





HAVING been elected a member of the Committee of the above Institution at the recent general meeting, I hope I may be excused for approaching my fellow gardeners for the purpose of endeavouring to influence their minds in favour of a more general and generous support of its funds. It cannot be said that I am asking others to do what I have not attempted to do myself, as I have contributed in one way or another between £70 and £80 to this great, good, safe and well-managed Institution.

It is difficult to understand why all gardeners do not rally round this splendid property of £29,000, especially when it is said that every shilling of it is their own. One would think that even from motives of selfishness, if from no higher, every gardener would strive to do all in his power to promote its usefulness and prosperity.

There cannot be less than 30,000 gardeners, nurserymen, and others engaged in horticultural pursuits who are, or ought to be, interested in its welfare, and if as many of these as can afford it subscribed their guinea a year, and if the remainder who are unable to do this were to collect small sums amongst themselves annually for the benefit of its funds, the question of old age pensions, as far as it relates to gardeners, would be solved.

Objections have been advanced by many persons against the Institution because it is not founded on the lines and principles of a benefit society, where a member can claim help at any time in case of need. On the surface this may appear to be a reasonable objection, and I am afraid has been the cause of many not subscribing to its funds; but I think on a little consideration that this objection may be proved to be an erroneous one, especially as in the case of gardeners whose wages are scarcely now stopped in time of sickness, and who, therefore, do not feel the pinch of poverty at this time like mechanics and others who are paid by the hour, and whose pay is stopped when work ceases. As bearing on this point, I may say I have been a member of a benefit society for upwards of twenty years, paying about 22s. a year, and if I am to remain a benefit member I shall have to go on paying that sum as long as I live, and in case of sickness and permanent disability from work I am entitled to 10s. a week for the first year, about 7s. the second year, and after that I believe the pay is reduced to 3s. per week for life. Let me ask my fellow gardeners who are still sceptical on this point to compare this with the advantages offered by the Gardeners' Royal Benevolent Institution, even from a benefit point of view, where after subscribing a guinea for fifteen years, or £10 10s. down, a member is almost certain to be placed on the pension list if he is of good character and incapacitated from work and in want, receiving without any further cost or trouble to himself £20 a year for life, whether his life be short or long.

Another objection has occasionally been levelled at the Institution, viz., that some gardeners who had subscribed but little and others who had not subscribed at all were occasionally elected pensioners. On this point I may say that we must not lose sight of the fact that by far the largest proportion of the property of the Institution has been subscribed by people out of pure benevolence for the relief of aged and destitute gardeners, and I for my

part would be very sorry to see this principle of benevolence infringed upon or curtailed in any way; and I hope and believe it will not be allowed to impose a barrier to prevent subscriptions flowing in. The Committee, as is well known, have introduced a clause into their rules, giving almost absolute certainty of election to those who may have subscribed for fifteen years, and the new rule passed at the recent general meeting will give subscribers substantial advantages over non-subscribers, inasmuch that a subscriber for four years will have fifty votes credited to him, and fifty more added for every year subscribed afterwards up to fourteen years.

My appeal in favour of the Institution, even from a benefit and an investment point of view, will, I hope, commend itself to the judgment of your readers. But I beg very respectfully to appeal to my brother gardeners from a higher level than a benefit one. That man's life is a poor and a barren life who lives entirely to himself, and nothing noble or good has ever yet been accomplished without a sacrifice of some sort.

The gardeners of the past half a century (and others interested in gardening and gardeners) have built up a noble standard of garden charity, which is now shedding gleams of joy and brightness round the declining life of many of our fellow workers who have fallen helpless by the way. Let me, then, appeal to all gardeners and others associated with them in the calling to rally round this splendid Institution, and to strengthen it with their active support, that all the deserving in our craft may claim a shelter under its wings in the time of adversity and want.—OWEN THOMAS, *The Royal Gardens, Windsor*.

[We give the prominence to which we feel the strong appeal of Mr. Owen Thomas is worthy, on behalf of one of the soundest and most useful charities in the world. We do this in the hope that the Institution, strong as it is, will be still further strengthened, and be able to meet the claims upon its resources of many a once able gardener who can no longer labour and who finds it hard to live through his few remaining years. True, it is that the Institution sheds "gleams of joy" in the homes of those who are recipients of its benefits; but correspondingly keen must be the disappointment and anguish of those candidates, equally worthy and needy, who fail each year to become participants in its funds.

Having regard to the uncertainty of the lives of pensioners—and we all wish they may be long and happy—no other method of dispensing its funds than the present one could be resorted to without impairing its stability. We fear—indeed, have heard it said—that the Institution is rich, and that no gardeners who have supported it should suffer want. We rejoice in its strength and in the great good it has done and is doing; but it is not rich enough to do what its officials so ardently wish with the amount realised by its funded property.

The Institution is prudently and economically managed. We are proud of it, and should like for gardeners to feel it an honour to be enrolled on its list of subscribers. The new rule alluded to by our correspondent we hope will induce many who are able to spare a guinea a year to invest it in this charity, which is as safe, so to say, as the Bank of England. Sorry we are to know of many who work in gardens intelligently and well who find their family claims so pressing that they do not find themselves able to do what they would like in supporting institutions that might eventually be in the highest degree beneficial to themselves and their families. But while recognising the existence of difficulties of that nature it must still be a fact that a still greater number of gardeners could, by making some slight sacrifice, set aside about 5d. a week, or less than 1d. a day, and so qualify themselves to become recipients of £20 a year, in case of need, to the end of their days, with a then possible grant of a large portion of that amount to their widows.

If fortune should so favour that aid is not needed by the contributors, then will they have great cause for thankfulness, and in no more appropriate way could they show their appreciation



of their immunity from want than in helping to relieve the dire distress into which their brothers and sisters in the craft have fallen. Mr. Owen Thomas is, we may suppose, one of the least likely to become a beneficiary of the Institution, and his thought is not for himself but for others, and we have no hesitation in expressing our strong approval of his appeal, prompted as it is by good feeling and supported by prudential considerations, which we hope may have weight with many thoughtful members of the gardening community.]

### SEASONABLE NOTES ON TOMATOES.

THE beginning of February is an excellent time to make a good sowing of Tomato seed, the plants resulting from which being useful for a variety of purposes. Some of them will be of great service for planting in vacant spaces in fruit houses; others will, if repotted when necessary, develop into large strong specimens for planting in the open air during the last week in May. In cases where a house can be devoted to them, the plants raised from the February sowing generally proves the most productive because they are grown under the influence of a stronger light in the early stages than plants produced from the autumn sowing, consequently they begin to fruit nearer the soil. The plants have, moreover, a sufficiently long season before them to enable the cultivator to take full advantage of the most productive stages of their growth before the dark days of autumn come.

The plan of sowing in boxes or pans answers very well if the seed is sown thinly, but there seems to be a great diversity of opinion as to what is meant by sowing thinly. For instance, some may think that placing each seed half an inch from any other is following that dictum; but I am fully convinced that if we are to obtain sturdy plants the seeds ought to be placed  $1\frac{1}{2}$  inch apart. The seedlings will then have room to develop without crowding till they have become sufficiently well rooted to be placed in 3-inch pots. I have no doubt that many beside myself have noticed that a Tomato plant in its early stages makes a large amount of top growth in comparison to its root extension; so that, unless the seedlings are thinly disposed, the growth becomes crowded before the roots have grasped the soil sufficiently to render transplanting desirable.

A temperature ranging from  $55^{\circ}$  to  $60^{\circ}$  at night, with a rise of  $5^{\circ}$  during the daytime, is a suitable for producing sturdy plants, provided they can be kept near the glass and have a free circulation of air on all favourable occasions. In order to guard against sappy growth, a condition favourable to disease, the plants should receive but little syringing after they are once established in pots; what moisture is required to prevent the attack of insects may easily be provided by damping the floors and stages of the house. A compost consisting of eight parts loam, one part manure from a spent Mushroom bed, and one of burnt refuse, is quite rich enough, and when ordinary garden soil is employed the only addition required is the same proportion of the latter ingredient and a little soot. If the plants are transferred from the seed box into 3-inch pots they will only require one other shift before being placed in their permanent quarters, except in the case of those needed for open air culture, where they have high walls, fences, or buildings to cover. It is in this instance desirable to place the plants into 9 or 10-inch pots to secure large specimens with a few fruits set upon them before they are placed in their summer quarters. Fine crops of Tomatoes are often secured in the open air by following this course. Firm potting should be practised, as it not only tends to keep the plants free from disease, but also renders them wonderfully productive in a limited space by inducing short-jointed growth, abundance of flowers, and, if other conditions are favourable, a good set of fruit.

When odd plants are wanted to fill vacancies in fruit houses, I keep the plants in pots and partially plunge them in the soil rather than plant in the borders, which are generally too rich for Tomatoes; moreover, I never allow much root run, the attendant evils being strong growth, and a difficulty in securing a good set. In houses solely devoted to Tomatoes the practice of growing the plants in narrow borders or boxes, is, I consider, the best to adopt. If the former are from 15 to 18 inches wide, and a few inches less in depth, and provided with 3 or 4 inches of drainage, a sufficient quantity of soil may be given to enable the plants to support heavy crops, while the roots will be thoroughly under control. Boxes about the same width, and a foot in depth, with 2 inches of drainage, are of the right proportions to secure satisfactory results; but it frequently happens that boxes have to be made much narrower to fit into limited spaces. In such cases the labour of watering is considerably increased.

If well rooted plants which have not been drawn during any

stage of their growth in 6 or 7-inch pots, are planted in positions similar to those above described, they will commence fruiting at a short distance from the ground, and continue to bear till their allotted space has been covered, or till late in the autumn. Specimens answering to the above description should be treated on the single stem system, and if all side shoots are removed, flowers will be produced at every joint. I have tried plants at various distances apart, but have come to the conclusion that when well grown 15 inches from plant to plant is the distance at which the greatest weight of superior fruit can be obtained from a given area. When plants have to be employed which have been unavoidably drawn in the early stages of growth, it is an advantage to lay in a few side shoots near the base to secure fruit to within a few inches of the soil.

The common practice of cutting away a large proportion of the main leaves in the early stages of growth is not one to be recommended, tending, as it does, to prevent the fruits swelling freely, and also encouraging the production of numerous side shoots, which are not required. It is perhaps not practicable to do away with shortening the main leaves altogether, but this necessary evil may, and should be, much more limited than it is; instead of allowing large leaves to develop till overcrowding takes place, it is a much better plan to remove a portion of such leaves when they are young, and thus prevent crowding and the severe check attendant upon wholesale mutilation when the fruits are swelling. When once the majority of them are well advanced in the colouring stage the removal of superfluous foliage is not of so much consequence.

Liquid manure should not be applied till a fair amount of fruit is set, then it may be given regularly at every alternate watering; frequent dressings of the many good manures advertised, or fresh horse droppings, are of great assistance in enabling plants to perfect prodigious crops, and such practices are preferable to planting in rich soil. A method adopted by some market growers is to utilise their Tomato houses for Mushroom growing during the winter, and partially plunge the pots in which Tomatoes are growing, in the Mushroom beds. This is undoubtedly a bad practice, and one which predisposes the plants to the attacks of the dread disease. One large grower of my acquaintance last year suffered severely from this cause, the disease to all appearance being brought about by allowing the roots to penetrate the rich manure.

If the plants are grown throughout in the manner I have described there need be no fear of disease. When, however, the slightest sign of its presence is detected the hot-water pipes should be kept constantly warm, and liberal ventilation afforded, at the same time keeping the plants somewhat dry at the roots. If this treatment is continued for a week all trace of the disease will disappear.

Almost every grower seems to have his own particular selection of Tomatoes, but I think it would be hard to beat Conqueror and Earliest of All for the early crop, Ham Green for the main crop, and a good type of Perfection for exhibition purposes.—CULTIVATOR.

### GROWING MUSHROOMS IN SOIL.

I AM sorry not to have been able to answer the inquiries made by Mr. Cranswick on page 4 of the Journal of the 5th of January sooner. I do not think I can add much to the original article where our practice was described, as it was tried but one year. When the Mushrooms came up in such numbers we were most surprised ourselves, and we shall certainly try the experiment again. Mr. Cranswick asks if the insertion of the ordinary brick spawn would produce equally good results. This we have not tried, but cannot see why it should not, as field Mushrooms grow in loam alone. For this practice the loam should be from old pasture placed on the top of existing borders made very firm and kept rather dry. If the spawn could be made to run and get established I daresay good Mushrooms could be gathered for years without any more future spawnings, but abundance of feeding, either liquid or with Thomson's manure should be given.

One of our houses was built one half on old pasture, the other half on land which had been broken up, cropped, and manured in the usual way for years. Some very large stools of Mushrooms made their appearance from the part of the border composed of the old pasture; on the other half we have never seen any, though all the house had the same treatment, being all planted with Tomatoes and top-dressed alike both with Thomson's fertiliser and ordinary farmyard manure, but no spawn was inserted at any time. I may mention that our soil here is on the old red sandstone formation, and is of fine quality. Everything seems to thrive in it, and we neither use either sand, leaf mould, nor farmyard manure. The Vines in particular thrive well.



As suggested by your correspondent, the length of time the spawn took to run was partly accounted for by the depth it was buried; and late in spring before the border was done up we had no fire heat, the house being naturally a cold one. We expect to gather Mushrooms next autumn from the same border. Even now, though the house is empty and has had no more heat than to keep out frost in severe weather, we see one or two fine Mushrooms are appearing.

We are only beginners in Mushroom growing, and groping our way; also like your correspondent, hunting after information and taking advice, and experimenting as often as we can. By another year we may strike on something new; at all events, we shall be able to speak with more confidence and experience in this new way of growing what is undoubtedly the most profitable crop one can produce. I shall be glad to give to all interested any hints I can through the *Journal of Horticulture*.—W. BUCHANAN, *Forth Vineyard, Kippen.*

### EXPERIENCE IN HEATING.

HEATING glass structures by means of hot water being a matter so closely connected with the cultivation of flowers and fruits, it is of great importance in growing them successfully to know something of the principles by which hot water is conveyed. I will try and make the subject as clear and simple as possible, that it may be readily understood by those whom it would be most likely to benefit. Mr. Fawkes, in his treatise on "Hot-water Heating," thus describes the principle involved:—"The construction and working of a low pressure hot-water heating apparatus is based upon the fact that water is at its greatest density and minimum volume at 39.2° Fahr. Upon the temperature being raised above this point the volume increases and the density decreases. In other words, a cubic inch of water at 40° weighs more than a cubic inch at 60°. It is obvious, therefore, that if we take a given quantity of hot and cold water and allow the two to intermingle, the immediate result of the difference in the respective specific gravities will be that the latter will push the former upwards, so that the hot water will lie at the top, the cold water at the bottom."

Thus we see that water upon being heated becomes lighter, expands, and rises upwards, and the colder water being of greater density lies at the bottom. This is sufficient for all practical purposes. It is rarely that a gardener is called upon to erect a hot-water apparatus; this more intimately concerns hot-water engineers. Those who wish to enter into fuller details can do so by consulting any of the works dealing with the matter. So long as we know the principles upon which the circulation of hot water depends, it is sufficient to enable us to regulate the apparatus by which our structures are heated. The first thing to consider is the number of structures to be heated and the kind of boiler that is likely to suit the purpose best. Boilers are numerous, and some are better adapted for certain places than others. The boiler that is the simplest in construction, and which exposes the largest amount of surface immediately over the fire is the best, and in my experience I have never found any to surpass a good terminal-end saddle-boiler.

### CISTERNS AND PIPES.

Having selected the boiler, we must decide upon the position in which it is to be fixed, and in this matter the stokehole should be constructed sufficiently deep to allow of a proper rise in the pipes to be affixed. Due regard must also be had as to whether there is likely to be any danger from rising water or its ingress in any way, for this would be liable to extinguish the fires, perhaps when the heat was most wanted. A space must also be allowed for holding the fuel near at hand, and this is best arched over with brickwork, the ground levelled, and an opening left at the top, to where it may be carted and easily thrown in. The cisterns for supplying the boiler should be fixed several feet above it in the stokehole, and ought to be fitted with a ball-tap, the feeding pipe brought from the bottom of it and connected with the lower side of the boilers. For large boilers a 2-inch iron pipe would be required. If a pipe of smaller diameter is used it should be of lead, and brass fittings employed on approaching the boiler connection, for fear of corrosion, which might be mischievous. An expansion pipe should be carried up from the top of the boiler into the cistern, to guard against any mishap. Where cisterns have to be filled by hand, great care must be taken that they never become empty. The chimney should be built so as to create a good draught, upon which much of the efficiency of the apparatus will depend. Now, having seen that hot water rises to the highest point, we affix the flow pipe to the top of the boiler, add other connections, always with a gradual rise, until the highest point is reached that we wish to proceed to, and then, with a corresponding fall, the return pipes are brought back and connected with the bottom sides of the boiler, where the colder water is in turn heated and sent along its way.

Main pipes underground should be covered with some non-conducting material, and be in trenches of brickwork, supported at the connections by piers, and upon these, under the pipes, short iron rollers, strong enough to carry the weight, to allow of contraction and expansion should be laid; this prevents the straining of the joints which makes them liable to leak. Main pipes are usually 4 inches in diameter. These mains must be laid in the most convenient manner for connection

to be affixed to them for the various houses which are required to be heated from them.

### LARGE AND SMALL BOILERS.

In some establishments one powerful boiler heats the whole of the structures, another being erected by its side in case of requirement or accident. This is a good plan where the houses are close, together, and for convenience in stoking; but this system is faulty when the houses are scattered and situated a long distance from the boiler, and where early forcing is practised. Two powerful boilers heat the whole of the structures under my charge, some nearly 300 feet away and containing between 9000 and 10,000 feet of piping, one boiler usually being used. I find them anything but economical in the earlier months of the year. Where so many pipes are underground there is a great waste of heat and fuel; in early forcing, when a cold frosty night is succeeded by a bright day, and the fires are stopped early, it takes much hard firing to get the pipes warm again by nightfall with such a large volume of water to heat, and wasting itself in a great measure underground. Again, with such a complication of valves, and various levels of pipes, it is extremely difficult to regulate the heat with any degree of precision. At times it seems inclined to rush in one direction,



FIG. 13.—ZYGOCOLAX VEITCHI. (See page 94.)

at others just the reverse, and it needs the greatest caution when going the last round at night to leave everything safe. Perhaps the attendant may find it necessary on his last journey to turn a little heat on certain houses when there is prospect of a sharp frost, when a rush of cold water into the boiler takes place and the heat robbed from houses where most needed, and failing a bothy on the premises or a night stoker this is most inconvenient.

Forcing houses are more satisfactorily managed when they are heated by boilers fixed at the back or north side of them, presuming they have a southern aspect, which all such houses should have. By this system the heat can be more quickly circulated and also shut off, than when it has to be conveyed a long distance by one large solitary boiler with numerous connections, for this entails a waste of fuel in heating a large volume of water, probably early in the season, for one or two houses only. A smaller boiler close by performs its work more efficiently and economically.

### ARRANGING HOT-WATER PIPES IN FRUIT HOUSES.

In arranging hot-water pipes for fruit houses, the first thing to consider is what occupants are to be grown therein, and what degree of temperature will be required to cultivate them successfully; whether the houses are required to produce ripe fruit early in the season, or at a later period when the sun's rays gain more power, for according to their requirements so are the houses constructed for their various purposes, and the amount of piping regulated likewise. We will take an early vinery from which ripe Grapes are expected by the end of May. For this purpose the lean-to form is undoubtedly the best, and such houses are usually erected against walls. That this form is best is obvious, as it



receives every ray of sun, which is of great importance in the early part of the year.

With respect to the amount of piping required, we shall have to consider the dimensions of the house. The usual size for early vineries is about 40 feet in length, 14 feet high at the back, the same in width, and 3 or 4 feet high in front. For efficiently heating a structure of these dimensions, six rows of 4-inch pipes the whole length of the house, and two rows at each end would be required. The vineries I have are larger, and have eight rows of pipes, which gives 1 foot of radiating surface to about 16 or 17 cubic feet of air. This we find quite sufficient. The dimensions previously given would average about the same proportions. It is far better to have a sufficient amount of piping moderately warm than a less amount which during severe weather has to be highly heated, producing anything but a congenial atmosphere. The flow pipe will be connected with the main at right angles, another connection rising from this into the house by the inside of the pathway.

Here I would point out the error of introducing the latter pipes at too great a height vertically from the first connection. I have them rising 5 feet, and at times the greatest difficulty is experienced in getting the heat into such houses, probably from friction at this junction, the heat invariably flowing to the easier gradients, and also leaving these points when there is not much pressure. It would be better if the connections from the main were brought into the house by an easier gradient. Such pipes should never have such a stiff rise, especially close to a number of connections, neither should flow pipes be arranged so that they have to dip under pathways and be fixed at a lower level than the returns until they rise again into the house, as the circulation is then never satisfactory. It might answer, but it is not the correct principle to work upon.

Where the pipes enter the house, good air-tight screw-down valves should be fitted on both the flow and return. There are various ways of arranging these six pipes. Sometimes four flows are taken along the front wall, converging into two single pipes at the other end of the house, forming the returns, which are carried alongside of the pathway on a parallel with the flows, and are connected with the main return. Air pipes should be fitted at the highest point of all flow pipes. At other times the pipes are arranged at equal distances over the floor of the house. In some instances one flow pipe is taken along the front wall and around the other end of the house, another 5 feet from it and parallel with it, joining it at right angles. These two are then converged into a single pipe. Then, supposing a tank was erected at the incoming end, which prevented the return being carried through into the main, we should have to continue the single flow pipe as far as the tank, bring the return back underneath it to the point where the two flows meet, where they are continued in a corresponding manner to the flows (underneath them), and on reaching the end of the house are connected into a single pipe and join the main return. This is not a good plan, and only adopted when unavoidable. Or we will suppose that two flow pipes are taken from the pipe entering the house and are carried along the front wall, two more flows 5 feet from them, and on a parallel with them, are carried to the opposite end of the house. These two sets of pipes here converge into two single pipes forming the returns, which are carried back 9 or 10 feet from the front wall and parallel with it, and connected into a single pipe into the main. This last-named system is undoubtedly the best, for the heat circulates quickly and equally, which early in the season is important. Sometimes the pipes are arranged similar to the above, commencing 18 inches from the front wall. Either plan will answer. I have never seen that it made any material difference. In any case the pipes should be arranged near the surface, for heated air ascends, and if fixed higher a portion of the heat is lost.

Evaporating troughs should be cast on some of the pipes, and arranged at equal distances apart. These should be five in number, 6 feet in length, and 6 inches wide. It will be necessary to form brick piers on a solid foundation at every 9 feet to carry the pipes, which may be packed upon these or carried on short iron standards. Slate cisterns for holding water should be provided in all such houses, and heated with a coil of 2 or 3-inch pipe, this being connected with the flow and return mains with pipes of less diameter, and fitted near the tank with stop-taps. These pipes ought to be independent of any required for heating the house. Houses are often built without regard to this matter, but it is a great mistake. The pipes should be painted black, this being best for radiating heat; and the mixture for the purpose generally used after they are in working order is boiled linseed oil with just enough lampblack to colour it; if too much of the latter is used it rubs off. The pipes should be made slightly warm when applying the mixture, and not be coated too thickly, this preventing radiation. The troughs should be painted red to preserve them, which also gives a smart appearance to the house. All joints of pipes must be effectually packed. Some use indiarubber rings, and fill in with cement; others use spun yarn and red lead; but the first-named method is the quickest and best if properly done. Joints near the fire should be made with iron borings. The above conditions apply to such Grapes as Black Hamburgh and the like. Muscat of Alexandria would require rather more piping if forced early. In the north of England this fine Grape should be cultivated in lean-to houses.

#### PEACH AND OTHER HOUSES.

For the early forcing of Peaches a house of similar dimensions would be suitable, only a less amount of piping would suffice. Four rows of 4-inch pipes the whole length of the house and two rows around the

ends should be employed. These may be arranged by bringing a single pipe from the main and connecting two flows; these ought to be continued along the front wall to the opposite end of the house, then they will descend by the side of the pathway, joining the main return in a corresponding manner to the flow. This amount of piping gives 1 foot of radiating surface to about 24 cubic feet of air. Valves, of course, should be fitted on both the flow and return where they enter and leave the house. Both valves in such positions must always be regulated equally, otherwise it is apt to derange the circulation. Sometimes single pipes are arranged continuously at equal distances over the whole of the floor of the house—half forming the flows, the rest the returns. If heated by a small boiler especially for the purpose, often without valves, this is a most objectionable system for several reasons, space not allowing explanations. Evaporating troughs will be needed according to requirements.

Fig houses, for producing early fruit, should be of the same proportions as for Peaches, but half the length would suffice; for, as a rule, they are not in such demand as the preceding fruits. They require similar treatment to Peaches with regard to temperature, therefore the same arrangements of pipes would answer.

Succession houses would require the same number of pipes—one less might answer in some localities, but it is far better to have enough than to find out at some critical period there is no possibility of keeping the temperature up. If houses are of different dimensions to these given, the heating power required can be ascertained by calculating by the same ratio, or other means will suggest themselves.

Cherry houses, if as large as those previously named, would require a similar amount of piping if the trees were forced early. In warm localities two flows and one return might answer, high temperatures not being necessary.

Late vineries and orchard houses are often constructed in the span-roof form, running north and south. For summer culture this form is best, as they contain a large volume of light and air. The east side gets the morning sun when at meridian its rays strike the top of the roof and south end, while the west side get the afternoon sun.

The span-roof vineries under my charge are 40 feet long, 24 feet wide, 13 feet high at the apex, and 4 feet high at the sides. These are heated with ten rows of 4-inch pipes. For late Grapes requiring plenty of heat I find they do not give too much heating surface. The flow pipe on entering the house branches right and left to the sides; these are continued along the wall on each side until they reach the opposite end, and then return parallel with the flow 9 feet from it. Two more flows are connected at right angles to the incoming flow pipe, 5 feet from the front wall, and are carried to the other end of the house, where they are connected into a single return pipe, which runs side by side and parallel with the other return. These, when they reach the end of the house from where they started, are connected into a single pipe into the main. Flow and return 2-inch pipes are carried under the pathway from the mains for the purpose of heating the cistern at the end of the house.

For houses containing such Grapes as Black Hamburgh eight rows of 4-inch pipes would be enough. Two flows along the wall, continued around the opposite end, and, returning on a parallel with, and 9 feet from them, back into the main return.

Span-roofed orchard houses will need a flow and return pipe on each side of the path, arranged singly on the same principle as the above. If lean-to a flow and return will suffice, the flow taken along the front wall, returning by the inside of the pathway, these structures only needing protection from frost, and a little warmth if necessary to ripen the wood of the trees.

Pines I have left until last, these not being largely grown nowadays. A fruiting house of useful dimensions would be 30 feet long, 16 feet wide, 9 feet high at the back, and about 4 feet high in front, of course built in the lean-to form. A chamber should be constructed about 3 feet from the back wall, and may be 21 feet long and 8 feet wide, heated with four rows of 4-inch pipes. Another path should be constructed along the front of the chamber 3 feet wide, and this would allow of a small pit or stage at the front of the house, which could be utilised for many purposes. If the front chamber is not desirable it can be dispensed with. This arrangement allows of every convenience for attending to the plants. For heating a house of this kind six rows of 4-inch pipes would be necessary. Four rows along the front, two flows and two returns, the remaining two pipes, one flow and return, being arranged along the back wall. Valves must be fitted on both sets of pipes, the flow and return pipes from the main being brought into the house transversely to these. Succession houses could be of the same dimensions. For suckers and small plants any ordinary forcing pit would answer. Sometimes fruiting houses are built about 8 feet high at the back and 11 feet wide, the path at the back, the bed in front, but this is a very inconvenient arrangement unless the lights are moveable.

#### BOTTOM HEAT.

Forcing houses with bottom heat are generally understood not to contain permanent occupants, but are utilised for forcing various kinds of produce as required, such as Melons and Cucumbers; also for forwarding flowering shrubs and plants. These should be lean-to with a southern aspect. As a rule they are too large for the majority of places. I consider a house 20 feet long large enough, thus a better succession can be maintained and a glut avoided. A house of this length ought to be 6½ feet high at the back, 2½ feet in front, and 10 feet wide. Houses of this description are usually built partly sunk beneath the ground level. Four feet in width should be allowed for the chamber in



front, which ought to be heated with three rows of 4-inch piping, 3 feet allowed for the path, and a narrow chamber at the back. It will require four rows of 4-inch pipes to heat such a house, a flow and return along the front, a similar arrangement along the back wall. Valves must be fitted on both sets of pipes. If a number of such houses are wanted a range can be divided by partition. The bottom-heat pipes are usually covered with slates, supported by iron bearers at about 18 inches from them. For summer culture houses may be constructed span-roofed, 9 feet high, 11 feet wide, with chambers on each side of the path 3 feet wide and 3 feet deep, heated with two rows of 4-inch piping, a flow and return on each side for top heat.

Houses for forcing Strawberries are not usually met with, these being brought along in such structures as the above, a temporary stage being erected, and the heat regulated to suit their requirements. If such a house should be contemplated, then it may be a little higher at the back, a stage erected with a slope towards the front, where the path would be constructed, as being more convenient for reaching the plants, and heated with two 4-inch flow pipes along the front, the return taken along the back, no bottom heat being required—at least, it is not actually necessary. A house 20 to 30 feet long and 10 feet wide would answer the purpose well.

One important structure, which singularly is generally found wanting in gardens, is a good propagating house. The dimensions given previously for lean-to forcing houses will apply here, the chamber being a little wider in front, reducing the other at the back. This should be constructed so that the small plants may be kept close up to the light, and still benefit by the heat at their roots. Four rows of bottom heat pipes would do better here, and anyone having much propagation to do, or raising early Melons and the like, will recognise the importance of this necessary structure.

#### THE MANAGEMENT OF FIRES.

Something must be said on fires and their management. The question of fuel greatly depends upon the position of the locality, the best being that suitable for the furnaces, combining efficiency with economy. Gas coke is probably more employed than any other. This is better for upright tubular boilers, coal or large coke not being so suitable, as it is liable to bind, and remain in the upper portion of the boiler after combustion has taken place below. Large hard coke is often used for powerful saddle boilers, and when there is a good draught this produces a great heat, does not clinker much, and there is little waste. This is obtained by burning slack and small coal in large ovens specially for the purpose. This is the kind of fuel we use, and we find it very satisfactory. Of late years anthracite coal has become much used. This gives more heat than coke. Sometimes coal and coke are mixed together. The fire should be spread evenly over the bars so that the whole of the surface exposed to the fire may be heated, not heaped up in one place, and the fuel added in sufficient quantity to always keep the fires bright, except when they are stopped, not in large quantities at one time. The bars and flues must be kept perfectly clean, with sufficient draught top and bottom to produce combustion. The dampers should not be opened more than is necessary for this purpose, otherwise the heat is wasted up the chimney.

In regulating temperatures judgment must be exercised with respect to the weather, this being the chief factor in managing the heat satisfactorily. When likely to be bright the heat should be reduced early, and the fires stopped, starting them early enough to get the pipes warm again by nightfall, or as may be required, executing the work in the most economical manner.

Strong valves should be fitted on the mains where they branch in various directions. Also 1½-inch pipes must be brought from the end of the boiler into the stokehole to empty the same if required. I omitted to mention that midseason houses may be constructed on the hip-roofed system if circumstances render it desirable, as affording a great abundance of light. When constructed against south walls ventilation is often provided for on the north side. The cold winds coming in that direction, especially early in the season, cause a great depression in the atmosphere, when it is found necessary to open the ventilators to any extent, and I am of opinion it should be arranged on the south side. The amount of piping necessary under ordinary conditions would be as advised for lean-to structures.—J. J. CRAVEN, *Allerton Priory Gardens, Liverpool.*

#### FUNCTIONS OF VINE LEAVES.

MR. BARDNEY, on page 525 (December 15th, 1892) contrived to condense the whole controversy into a nutshell, and he could not have better expressed my views had he been commissioned to do so. To me it was very satisfactory to find that he has modified his views considerably in the matter of allowing Vines to form a superfluity of wood. Plenty of men there are who also alter their views on different subjects, but have not the courage to confess as much. He rightly makes a distinction between Vines in good health and those requiring to be renovated, and that is what all should do. If the root action is defective, allowing more leaves to develop is one of the means of restoring the balance, but there is no sense whatever in permitting Vines to expend their superfluous energies in the formation of foliage or wood that only interferes with their other functions.

Mr. Bardney is evidently of the same opinion as myself regarding the value of extra large leaves. I have seen too many instances of the comparatively worthlessness of rank foliage and coarse growth to envy my friends their achievements in that direction. Give me medium

sized perfectly healthy leaves and wood to correspond, the latter, whether in the shape of young shoots or short spurs, being far more durable than any of a grosser character, and will produce the most perfect if not exactly the largest bunches. Then, late-formed foliage is worse than useless, and all that is needed are enough primary leaves to afford a thin canopy for the bunches. Two good leaves beyond the latter and other laterals not bearing bunches and of much the same length are ample, and if the foliage is kept clean and sound, the roots properly supplied with moisture and food, and overcropping avoided, there will be no renovating measures needed for very many years.—W. IGGULDEN.



THE NATIONAL ROSE SOCIETY'S FIXTURES.

THIS promises to be as fruitful a source of *arguifying* as I remember the word *Gladiolus* used to be in a certain horticultural society with which I was acquainted. Whenever they were at a loss for something to talk about someone would mention the word. Then arose the question, Was it *Gladiolus*, *Gladiolus*, or *Gladiolus*? The discussion used to be prolonged, somewhat classical, and earnest, but I believe the result was that everyone held to his own opinion, no way altered by what many thought the conclusive arguments put forward; and I think it is likely to be much the same with the fixtures of the National Rose Society, more especially the metropolitan one, and I do not suppose that anything I may write will have the least effect upon any of the disputants; but for all that, as one or two letters have appeared lately on the subject which seem to require notice, I venture to "take off my coat," and enter the lists.

In discussing this subject I think I have some advantages over many if not all of those who have taken part in the controversy. In the first place as Hon. Secretary of the National Rose Society I know all about its position, its requirements and its difficulties, and there are many things which many of your correspondents seem to be unaware of; and then in the second place I am not an exhibitor, and this is I think a very great advantage. Not one, even officers of the highest rank, who were engaged in the strife could have had so clear a view of the great fight of Konigratz as Dr. Russell, when from the top of the tower he had the whole laid out before him. Those engaged in it could only take in the part immediately around them. So it happens in such discussions as these the writer is evidently influenced by the circumstances of his own garden, and hence his judgment is not altogether a disinterested one. The non-exhibitor can certainly, like the non-combatant, take things more easily.

There are some things of which many of your correspondents seem to be ignorant. It must always be remembered when some write so loftily of arrangements, and what should be done and what not, that we are not independent, that we are quite dependent on the Crystal Palace Company for having any Metropolitan Show at all. It may be a humiliating confession, but it is true for all that. We have made attempts to act independently, but failure was the result. Our first Exhibition entailed a loss of some £200. We have sought in vain to find any place fit to show Roses in, but there is none. Moreover, an Exhibition could not be got up in London under at least an expenditure of £400, and our experience at St. James's Hall was that we did not attract half a dozen of the passers by, those who did come were persons more or less connected with the exhibitors. Consequently, while it answers the C.P. Company to have the Exhibition there it unquestionably answers ours, although there are disadvantages. Thus the matter of arrangements must depend on them, not on us; but I am bound to say some persons have very short memories. It is only now and then that we are interfered with by such a matter as the Electrical Exhibition, and very rarely that our exhibitors have to complain of want of space; in most of our Exhibitions both we and Mr. Head have had to complain of great gaps being left, because exhibitors have not brought their stands, and have given no notice of their withdrawal. Again, it strikes one as a very idle matter to compare the arrangements of a great Show at the Crystal Palace to any provincial one, however good. In the latter you are confined to one tent, and you can get to any part of it in a couple of minutes, not so at the C.P., as many know to their cost. If an amateur is exhibiting in the amateur and open classes he has often a long way to traverse before he gets his plants staged, and considerable delay is also made for the same reason in uncovering the boxes and getting the blooms ready for the judges. I hope that the Committee will see their way to appointing someone who will have nothing else to do but to see this part of the day's work carried out, and who will have authority to have all lids removed in time for the judging. Personally, I cannot do it, there are so many things about which I am continually badgered that I cannot undertake this. Here is one angry exhibitor who, on being asked to clear out, folds his arms and steadily refuses to do so until he gets a place for his box; here is another who wants to know whether he is to put his box in such a place as that; while the mistakes of exhibitors who in their anxiety place wrong cards upon them only increases the confusion.

With regard to the date for the Metropolitan Show I have been



intensely amused at the virtuous claims put forward by some. One writer, with most refreshing *naïveté*, suggests that those who advocate the early date have only thoughts of their own Roses, evidently assuming that the dear innocents who favour the later date were no way influenced by such motives. And yet one could not help smiling, for did we not know that the gravamen of some of the doughtiest champions was that only flowers from cut-backs could be shown, their maidens not being in, and all the while thinking of them they were humming to themselves "The Girls I Left Behind Me." Again, some of these advocates of a later date are very susceptible about the dear northern growers, but I think we may well ask who they are? Since the retirement of Mr. Whitwell and Mr. T. B. Hall we have no amateur grower of the first class in the North, and very few of any class. We have in the Midlands a few, but they have yet to make their mark. It is the same with regard to professionals. Setting aside Messrs. Harkness and Mack, the latter a very rare exhibitor, we have none, and Messrs. Harkness having now taken some land at Hitchin may be almost regarded as southern growers. Nor do I find that the susceptibilities of the northern growers are much taken into account at the provincial Exhibition, for since Mr. Hall's days the Jubilee trophy and most of the principal prizes have gone to Essex, Somersetshire, Gloucestershire, Hertfordshire, &c., so that it is raising a false issue to put forward the northern growers as a reason for altering the date of the Metropolitan Show. Mr. Grahame has put the matter clearly, and I think that these additional facts ought to have some weight.

The same airy indifference with regard to the real circumstances of the case pervades the statements of those who find fault with the judging, and suggest methods for its improvement. Do the writers quite understand how it is? In the first place, then, look at the time. Even if the exhibitors kept their time we should have but an hour. The space is cleared, or ought to be cleared, for the judges at eleven o'clock, and at twelve o'clock the holders of private view tickets and the season ticket holders of the Crystal Palace are clamouring for admission, and must be admitted; hence it is impossible but that there must be, in some instances, hasty judgments. I do not say that they are therefore wrong, but they are hasty. Then, again, do exhibitors understand that there are upwards of sixty judges required, and I think it will not be speaking too severely to say that there must be some inexperienced ones amongst them. The notion, then, put forward by some writers with regard to the medal Roses that they should be judged *after* the other classes are judged is deliciously absurd. The driving of six omnibuses abreast through Temple Bar would be child's play to such an attempt as this. I have been more than once called very hard names because I would not prevent the visitors after twelve o'clock from putting their unwelcome presence amongst the judges. And while writing on this subject I would emphasise most strongly what I cannot but think must be called the inconsiderate conduct of some of those who are selected for the office of judge; they accept it and then never turn up. No one but the unfortunate Secretary can have any conception of the amount of confusion and trouble that this occasions, and the disorganisation occasioned by it is one of the most fruitful sources of complaint. I most sincerely hope that all who accept this post in the present year will not allow anything to interfere with the fulfilment of their engagements. When especially this takes place in the higher classes, where the judges have been most carefully selected, the confusion that this creates has not reference only to the class from which the judge has dropped out, but in others from whence one has to be taken to supply his place.

The subject of voting by proxy is one with which I confess I have no sympathy. It has been abolished in our highest legislative assembly, it is not used in any public body that I am aware of; it is true it is adopted in railway companies, but that is of an entirely different character. The questions to be submitted to the annual meeting may be taken in various aspects, and so may the reasonings of those who take part in the meeting. I remember once being with a friend who was to preach for a special object at a church in Sussex, but before the sermon was preached the collection was to be made. Never shall I forget the indignant scorn with which my friend, who was an Irishman, replied to the churchwarden: "And do you mean to tell me that, no matter how eloquent I may be, it will make no difference in the collection?" I need hardly say it damped his appeal, so if members send their proxies it would imply that their minds were made up, and that no force of argument would in the least degree affect the decision; thus it would entirely destroy the character of our meetings, on which we have been so often complimented. However strongly members may feel, they speak with forbearance, and I have never seen anyone lose their temper except once. Then it brings rosarians together, and this is a great gain.

With regard to dates for shows, it should be remarked that taking the challenge trophies as a test in the ten years, from 1881 to 1891, the amateurs' trophy has once been taken by a northern grower, Mr. Whitwell, and the nurserymen's twice by Messrs. Harkness & Sons; while the Jubilee trophy, which it was certainly hoped would be taken by northern growers, has twice out of the four times been taken by Mr. Pemberton, and the nurserymen's twice by Mr. F. Cant. These facts I think sufficiently prove that it is impossible so to fix dates as will meet both north and south alike, and that the fairest way is to consider the southern growers in the metropolitan shows, and the northern and midland growers in the provincial shows. It is the same in other societies. It was impossible to fix a date for Auriculas that would suit both northern and southern growers, so there was a separate date fixed for

each. I have often heard my friend Mr. T. B. Hall say that the best Roses he exhibited during the season were those set up at the Liverpool Show towards the end of August, and I feel assured that there are so many things that influence the Rose—soil, situation, the stocks used, and the character of the season, that it will be always impossible to fix a date that will satisfy all, and that taking all this into consideration we can hardly improve on the present fixtures.—D., Deal.

P.S.—I wish it to be distinctly understood that in the foregoing observations I do not write in my official capacity, but simply as a member of the N.R.S.

#### NATIONAL ROSE SOCIETY.—JUDGING.

IN reply to "W. R. Raillem's" remarks (page 70) on judging I would like to explain my meaning. I have no doubt "W. R. Raillem" will more readily agree with what I now say, but I thought that my former remarks would be understood, although not expressed to the fullest extent. There are many of our largest amateur growers who also exhibit, but the work of observation is done by their gardeners. Many of these gentlemen are rosarians by courtesy, but not so in reality; and "of such" are the large growers I referred to! I abide by my previously expressed views, that a small grower—a person, for instance, who grows 100 exhibition varieties, say six of some and as many as eighteen of others, and who, taking account all round, is a grower of about 1000 or 1500 Roses, who has these Roses well within view; who also has the plants so arranged that some have cool positions and others warm early corners, &c; such a rosarian, by knowing the habits of Roses grown in various positions, by seeing other persons' exhibits, and by being a man or woman of observation (I have a very high opinion of the discrimination of ladies in Rose culture and exhibiting) can be a judge of the very highest class. After all how many varieties are constantly shown? I venture to say not nearly 100; no, not even 60 varieties. Of course, in the seventy-two champion nurserymen's class there may be some half a dozen Roses not frequently seen, but they are not the blooms on which the result of the championship usually will turn.

I cannot see what the question of the *soil* of the gardens the Roses come from has to say to the value of the Roses set up—you judge the Roses, not the soil, and the same applies to the moss. I do not think a judge should give a single point to the moss; he is placed as a judge over Roses, not moss, and he should judge the flowers individually as well as collectively; if they be superior to their opponents in quality, and the setting up in no way infringes any rule of our Society, then they should be awarded the first place, and I am sure that our judges do make their awards on this basis. I also think that any doubt of such fairness on our part as judges would deter new members from exhibiting, especially as young rosarians must be only too conscious of their shortcomings in setting up and other details only mastered by constant practice. I shall defer the discussion of the Metropolitan Show to the autumn, I should like to say to the Greek Kalends.—CHARLES J. GRAHAME.

P.S.—In connection with my assertion of the number of varieties most frequently shown at exhibitions, I would refer your readers to Mr. Mawley's article on this subject published in the Journal some months ago.—C. J. G.

#### PROXY VOTING.

I DO not quite follow "K." (page 70) in his remarks upon this question. Of course it is more satisfactory to vote in person, but we contend that it is better to vote by proxy than at a heavy cost of time, money, and trouble, which in these days too often means not voting at all. I and others have "pegged away," but the expense and sacrifice of time have been, as I expected, too great for all but a few. Besides, the distant members think they have not their share of privileges in other respects, and so they are scanty in number and lukewarm, not hearty and united enough to make their voice heard as a strong body. They know that they would be "at a disadvantage" even in voting by proxy, but they are strongly of opinion that they are at a worse disadvantage as at present situated.

In money alone it costs a large average of the distant members as much as their yearly subscription to attend and vote; why should they be charged twice as much as the metropolitan members for the privilege of voting, when they will still be at a disadvantage in matters of climate and date? I am sure the N.R.S. should for its own sake justify its title by endeavouring to show equal justice to the members at a distance.—W. R. RAILLEM.

#### THE DATE FOR THE "ROSE DERBY."

AS prominently connected with the question of the date of the Metropolitan Exhibition of the National Rose Society, now being so vigorously discussed in the gardening papers, may I be permitted to offer a few remarks and a friendly criticism?

We must not individualise. It is not a question of what date suits Smith, Jones, or Robinson. We must take a broader view than this. The case for the later date rests principally on these grounds. 1, The Society claims to be "National." 2, The Metropolitan Show is the "Rose Derby" of the year. 3, The "Rose Derby" should be held at the height of the Rose season of all England, not a small part of it, for the Society is "National." 4, The "Rose Derby" this year is fixed for July 1st. 5, Can either July 1st, 2nd, or 3rd be considered the height of the Rose season?

If the most popular dates, if the dates on which there is the greatest clashing of Rose shows be any criterion as to the height of the Rose



season, then, from a return based on the last eight years, July 8th and 9th are the most popular dates, more shows clashing on these dates than on any other, and, therefore, presumably the height of the Rose season. I have exhibited at every "Rose Derby" from the first Show held in St. James' Hall in 1877, and my experience leads me to the same conclusion—viz., that the height of the Rose season is July 8th or 9th.

Now for a little friendly criticism. What special advantages does Mr. Grahame possess whereby to form his opinion as to the height of the Rose season? 1, Has he a lengthened experience? No. His name first appears as a member of the N.R.S. in 1889. 2, Has he a large Rose garden, growing plants in different situations? No. He describes his garden as "being of the most diminutive size." 3, Does he grow his Roses in such a way as to lengthen his Rose season, cut-backs followed by maidens? No. He says in reference to maidens, "I have no room to try such experiments." 4, Does he visit, other than the two provincial shows of the N.R.S. in 1891 and 1892, the Rose shows north of the Trent, and so ascertain the high standard there attained in the latter half of July? No. He says, in reference to attending these shows, "I am not anxious to compete out of my proper district." Herein, I think, lies the reason for the course he has taken. If his "proper district" was less circumscribed, if he ventured once now and again to visit northern shows, he would know the strength of the north. He would know on what date the northerners are at their best. He would not class Messrs. Burch of Peterborough with "other northerners," seeing Peterborough is seventy or eighty miles south of Worksop. He would know that the Midlands, except in special localities, is the latest of all districts. He would know the "Cants" do not show north of the Trent "late in the season." He would know the grand displays of seventy-two blooms exhibited at the late shows by Messrs. Merryweather, Harkness, Perkins, Dickson, and Cocker; he would remember, if he had been there, the magnificent Charles Lefebvres exhibited by Mr. Machin last year on July 30th; and when he knew all this he would desire to see such Roses exhibited at the "Rose Derby" of the year.

I am sure he will take my criticism in good part. A difference of opinion should not make us worse friends; but I cannot forbear speaking my mind when I observe him stating time after time that which I feel sure he would be the last to state were he not drawing upon his conjecture rather than speaking from experience.—JOSEPH H. PEMBERTON.

#### DOUBLE PRIMULAS AND THEIR CULTURE.

THERE are many good forms of Primulas in cultivation. I have grown a variety named albo-pleno fimbriata for many years. It is invaluable for supplying cut flowers during the winter. Nurserymen and florists are alive as to the value of these plants for supplying a profusion of choice white flowers. In visiting a nursery where there are large demands for cut flowers one would be astonished to see the number of double Primulas grown for that purpose. Many people find it difficult to propagate and grow these plants satisfactorily. I grow from eighty to 100 of them annually, and will now give a few simple cultural instructions that I have proved to be sound.

After the plants have done flowering I clear off all the bottom leaves. I then prepare some light compost of leaf mould, old cocoa-nut fibre refuse, silver sand, and crushed charcoal. With this material I earth the plants up, forming a mound around the stems, but not entirely covering the crowns. After this they are watered through a fine rose to settle the soil. They are then placed on a shelf in a warm house near the glass, keeping the soil moist by sprinkling the plants in bright weather. Here they usually remain for five or six weeks, by that time they will be well rooted. I then shake the soil from the roots, and divide the plants into as many pieces as possible. Nearly all those crowns can be taken with roots attached. They are then placed singly in small pots in a compost of good turfy loam, leaf mould, a good sprinkling of crushed charcoal, and some coarse silver sand.

After being potted the young plants are placed in a cold pit kept rather close till the young crowns are established in the pots. When well rooted the plants are placed in 48-size pots, in which they flower. The compost for this potting is the same as that recommended, with the addition of a little bonemeal. Careful watering is always needed in the culture of double Primulas, with constant attention from beginning to end, or failure will sure to follow. The best place for flowering them is a shelf near the glass in a warm greenhouse where they will continually produce trusses of bloom in great abundance all through the winter. Are the flowers of White Lady superior to those sent?—E. H., *Mountains, Hildenborough.*

[Admirably grown specimens of a bold form of the old Double White accompanied this communication. The variety resembles a pale form of Annie Hillier, the stems or stalks are of a pale green hue, and the fully developed flowers tinged with flesh colour. White Lady has dark foliage and reddish stalks, the flowers more double and purer in colour, in fact a good white. Marchioness of Exeter is of the same character, but has larger flowers that are less pure. Still, when well grown it is a splendid variety.]

I CANNOT but think Mr. Gilbert (page 75) is under some misapprehension with respect to the names of his double Primulas. I have always understood that Mrs. A. F. Barron was of a carmine colour. It was by that name shown last October, in excellent condition. The white form described by Mr. Gilbert reads like White Lady. Marchioness of Exeter should be carmine flaked, but there is always a tendency for the flake to wear out, and unless plants that maintain that

feature in the flowers are chiefly propagated the flake may disappear altogether. Generally it is of so trifling a form that it rarely interferes with the classification with the white variety. Added to those named, Annie Hillier, robust grower, flowers white, heavily suffused with pink, having also pale green foliage, is good; so also are Rubra grandiflora, crimson; and Atro rose-plena, deep crimson. Those named constitute probably the finest half dozen of double Chinese Primroses in cultivation.

I should like to hear whether anyone has the fine varieties that some twenty-five to thirty years ago were raised by Mr. Stewart, gardener to Mrs. Eyre Crabbe, Southampton, and named and introduced by Mr. Henderson of Pine Apple Place. It is possible that these were not so robust as were those Mr. Gilbert of Burghley put into commerce; or no one may have understood how to grow double Primulas as Messrs. Cannell & Sons, who do them splendidly, or some of the Leatherhead gardeners, whose fine plants I referred to in the late autumn.—A. D.

#### PEAS AND CABBAGES.

NEW varieties of Peas come upon us in such numbers that it is impossible to keep up with them; but it is possible to try two or three of the newer kinds. Gradus is a decided advance upon the early varieties, having pods and peas of the size of the midseason kinds, such as Telegraph. This will be in great request by exhibitors for early work. Handsome though it be, it will not displace Charmer with me, which comes in about the same time, is a heavy cropper, and of excellent quality. Oracle is a great acquisition, a very prolific cropper, bearing its pods in pairs, which are of deep colour, long, and very closely packed. Alderman is one of the giant-podded varieties, and will be a favourite with those who are admirers of immense pods. It is a grand exhibition variety, but I prefer Autocrat, which I believe cannot be beaten for appearance, quality, and cropping. No Pea has ever done so well with me.

I do not like a Pea that does not keep the pods well filled. However young one may pick Charmer, Autoerat, or Oracle the pods are filled in proportion to their size. Some of the giant-podded Peas are too often deceptive in this respect. I am not fond of the very early round Peas, and am quite content to wait for William Hurst, which is early and of excellent quality. William Hurst, Charmer, Oracle, and Autocrat, together with Duke of Albany, form an excellent succession of good Peas such as can hardly be beaten for cropping, appearance, and quality.

#### A TRIO OF CABBAGES.

Last spring I had under trial Ellam's Early grown alongside of Messrs. Vilmorin's Express, Etampes, Paris Market, and Rennes. Ellam's once more took the lead, and had firm little hearts a week before Express, which, however, is a very good Cabbage indeed and a capital companion to Ellam's Early. Paris Market and Etampes I will only say were very good Cabbages, but as earliness is everything I do not think they are desirable when the two first mentioned are obtainable. For a main crop and a large Cabbage of very good quality I can recommend Rennes. This I should judge to be just the Cabbage for cottagers and market growers, for it is by no means slow in turning in, and is of good appearance, compact, and of fair size. It is also good in quality when cooked. These three Cabbages will afford an excellent succession.—H. S. EASTY.

#### LABELS IN KENSINGTON GARDENS.

I SHOULD be much obliged if you will kindly inform me how the names of the plants are written on the large labels used in Kensington Gardens. The labels appear to be ordinary wooden ones painted white and written on with some sort of ink or paint in a bold copper plate handwriting with some very broad pointed pen, and seems to be practically indelible. I should have said such labels were in use last summer, and no doubt are so now.—H. E. M.

[We received the foregoing letter last week, and replied to it briefly in our "Answers to Correspondents." In the meantime we wrote to Mr. W. Browne, the Superintendent of Hyde Park, and he promptly favoured us with the following reply:—

"The labels referred to are 'home made.' I send herewith a couple for your inspection. You will observe they are simply pieces of deal, painted with three coats of green colour, and the points tarred. The name is written in ordinary white paint, with a 'writer's pencil' (small camel hair brush). Labels are a great disappointment to a plant broker, reminding one of cemetery tombstones in miniature. I suppose they must be regarded as a necessary evil. However, I think the green ground of our label is a great improvement on those with a white surface."

It appears that "H. E. M." was wrong in his impressions. The labels are not painted white and the names displayed in dark letters, but the labels are green and the lettering white. There is nothing conspicuous about these labels but the names, and that is exactly what is wanted. With white labels the reverse is apt to be the case—the labels obtrusive, and the names obscure. The change is a simple one, but altogether satisfactory, the labels being far more agreeable in appearance than the "staring" white ones that adorn the borders in many gardens. The samples sent by Mr. Browne are made of half-inch deal, one of them 18 inches long and 2 inches wide, the other a foot long, and 1½ inch wide. The names are very clear as represented in what may be termed half-inch letters.]





**EVENTS OF THE WEEK.**—The annual general meeting of the Gardeners' Orphan Fund, for the purpose of adopting the Committee's report and the election of orphans, will be held at the Cannon Street Hotel, E.C., at 3 P.M. on Friday, February 3rd. On Tuesday, the 7th inst., the members of the National Amateur Gardeners' Association will hold their annual meeting at the Memorial Hall, Farringdon Street, E.C., at 7 P.M.

— **THE WEATHER IN LONDON.**—The weather has been comparatively mild in the metropolis during the past week. On Sunday rain fell during the day, but Monday proved fine, with occasional slight showers in the evening. On Tuesday morning it rained. Wednesday opened fine, and at the time of going to press south-westerly winds are blowing.

— **WEATHER IN THE NORTH.**—With a touch of frost on three mornings, and occasional high winds, the last week of January has been generally dull and mild rather than wintry. Snow fell heavily for some hours in the morning and forenoon of Saturday, heavy rain followed at night, and all had disappeared by Sunday morning. This morning (31st) is showery, with the thermometer at 40°.—B. D., *S. Perthshire*.

— **DEATH OF MR. G. W. BOOTHBY.**—We regret to record the death of Mr. G. W. Boothby, Holme Cottage, Louth, which took place recently. Mr. Boothby was in past years a well-known Rose grower, and an authority on horticulture generally. At the time of his death he was fifty-six years of age. Mr. Boothby was of a genial disposition and unassuming demeanour, and his decease will be much regretted by all who knew him.

— **NATIONAL AMATEUR GARDENERS' ASSOCIATION.**—The second annual meeting of this Association will be held on Tuesday evening, February 7th, at the Memorial Hall, Farringdon Street, E.C. The Committee's report and statement of accounts will be submitted for approval, and the election of officers for the current year will take place. Mr. T. W. Sanders will preside.

— **PEAR DOYENNE DU COMICE.**—With us few Pears succeed as pyramids or bushes in the open. The above variety, however, is decidedly the best for this form of culture that we can grow. This is not a Pear soil by any means in the open, it being too heavy, cold, and retentive during the winter and spring. When we have a Pear crop at all this variety produces the most fruit.—E. M.

— **A DELICATE QUESTION.**—An unlooked-for question arose at the meeting of the Crays Cottagers' Horticultural Society the other evening. It was stated that an exhibitor, on one occasion, had taken a prize for Roses, although at the time he had not a Rose in his garden, and the question arose whether it would not be wise and expedient to do, as some other societies do, appoint a member or members of the Committee to visit and inspect the gardens of the exhibitors at the time of the Show, as a safeguard against this kind of fraud in the future.

— **CHISLEHURST GARDENERS' ASSOCIATION.**—At a meeting of this Society, held on the 24th inst., Mr. H. Cannell of Swanley delivered a lecture on "The Rose." He detailed the treatment required, and brought to light many points of great importance in the successful cultivation of the Rose. The Society have only been in existence for about eighteen months, but much good and useful information has been spread by its agency through the locality, and the future bids fair for greater success.

— **PRESENTATION TO A SEEDSMAN.**—Mr. George Thomson, foreman in the seed department of Messrs. Ben. Reid & Co., Guild Street, Aberdeen, who is shortly leaving for Africa, was waited on at his house by a deputation of his fellow employes recently and presented with a handsome dressing-case, subscribed for by the hands in the seed department. Mr. Cook, in making the presentation, spoke of Mr. Thomson's twelve years of faithful service and of the high estimation in which he was held by his employers and their customers with whom he came in contact.

— **RICHMOND HORTICULTURAL SOCIETY.**—We are requested to state that the summer Show of this Society will be held on June 28th next.

— **MR. SAMUEL BARLOW.**—The *Middleton Albion* sheet almanack contains an excellent portrait of Councillor Samuel Barlow, J.P., C.A., who is the Mayor of Middleton, and we are pleased to see the ardent and genial florist looking so well.

— **PROFESSOR MICHAEL FOSTER, Sec.R.S.,** one of the Vice-Chairmen of the Scientific Committee of the Royal Horticultural Society, has been appointed Rede Lecturer at Cambridge for the present term. His Rede lecture will be delivered early in June.

— **ENGLISH WALNUTS IN CALIFORNIA.**—Besides numerous other kinds of fruit English Walnuts are now grown in California. A Californian paper informs us that a single train from Rivera, in Los Angeles county, recently carried East for transportation 200 tons of these nuts.

— **A FRENCH BOTANICAL INSTITUTE.**—The French Minister of the Interior has established at Marseilles, in connection with the university, an institute for botanical and geological research, and a museum. The director is Prof. Heckel, who, as well as a curator and a librarian, gives his services gratuitously.

— **FRUIT GROWING IN CALIFORNIA.**—They do business on a large scale in California. The "Fruit Grower" tells of one firm with 500 acres of Prunes, Peaches, Pears, Nectarines, and Apricots, from which they obtained an average of £52 per acre. The same firm has a vineyard of 1100 acres that they expect to realise at least £40 per acre.

— **BRIXTON, STREATHAM, AND CLAPHAM HORTICULTURAL SOCIETY.**—At the annual general meeting of this Society the date of the autumn Show was fixed for November 8th and 9th at the Streatham Town Hall, and on the suggestion of the Hon. Sec., Mr. W. Roupell, it was resolved to affiliate the Society to the Royal Horticultural Society.

— **A LARGE ROSE TREE.**—At Cologne there is a Rose tree, says "Meehan's Monthly," which is believed to be 300 years old, and has a trunk of 4 feet in circumference. California has one which is now 3 feet in circumference at the ground. It was only planted in 1876, and is now said to cover 2000 square feet. Unfortunately, the variety is not mentioned.

— **THINNING FRUIT.**—A prominent Missouri Apple grower experimented with thinning his fruit on the half of each of several trees to note the effect. On that part of each tree where the fruit had been vigorously thinned, the matured Apples were more than twice as large as on the other part of the tree, of much better quality, and, says an American contemporary, sold for a better price. Not only this. The part of the trees where the fruit has been thinned bore each year, while the unthinned parts bore only on alternate years.

— **PRIMULAS IN AMERICA.**—Our excellent transatlantic contemporary, the *American Florist*, shows by well-executed photographic illustrations the character of Primulas grown on the "other side." Assuming them to represent good cultivation, we cannot fail to notice how inferior the plants are to thousands that are grown by gardeners in this country; nor are the "life sized" blooms depicted in the pages referred to by any means equal to the best English strains.

— **AMERICAN PRIZES FOR NEW PRODUCTIONS.**—From the above source we find that if we excel in the growth of Primulas, our transatlantic friends take the lead of us in encouraging the production of new varieties of fruit, flowers, and vegetables. The Massachusetts Horticultural Society is particularly to the front in this respect. In addition to numerous other awards, special prizes are offered as follows:—Fruits: For the best seedling Apple and Pear, £12; for the best seedling hardy Grape, £12; for the best seedling Cherry, £8; for the best seedling Strawberry, £6; for the best seedling Raspberry, £8; for the best other seedling fruit, £8. Flowers: For the best seedling Rose, £10; for the best seedling Camellia, £10; for the best Azalea indica, £10; for the best seedling Tree Pæony, £10; for the best seedling herbaceous Pæony, £10; for the best seedling hardy Rhododendron, £10; for the best seedling hardy Azalea, £10; for the best seedling Chrysanthemum, £10; for the best seedling single-flowered tuberous-rooted Begonia, £10; for the best other seedling flowering or foliage plant, £10. Vegetables: For the best seedling early Potato, £6; for the best seedling late Potato, £6; for the best other seedling vegetable, £6.



— **NATIVE GUANO.**—The Native Guano Co. (Limited), 29, New Bridge Street, Blackfriars, E.C., send us, through their agents (Messrs. Laughton & Co.), a pamphlet of some fifty-six pages, setting forth the virtues of this valuable manure. A glance at the contents of the *brochure* will convince anyone that native guano is extensively used in gardens. Reports as to its value for producing garden and farm crops, sent by well-known gardeners and gentlemen from all parts of England, Wales, Ireland, and Scotland, are embodied in this publication. Some useful hints as to the amounts that should be applied to various crops are also included.

— **KINGSTON GARDENERS.**—At a meeting of a number of the gardeners of Kingston and Surbiton held last week, it was resolved to form a Gardeners' United Cricket Club for the district, and a code of rules was drawn up and passed. Mr. W. Henbest, Anglesea House Gardens, was appointed captain. After the business incidental to cricket was disposed of, it was further agreed to convene a meeting of the gardeners of the district and any others interested in horticulture, which will be held at the Albany Hall, Kingston, on the evening of the 2nd of February. By special request Mr. A. Dean undertook to convene the meeting, the object of which is to form, if possible, a Gardeners' Association for the promotion of the social and intellectual status of gardeners. It is hoped that there will be a large attendance, and that so important a town will have its Gardeners' Improvement Society.

— **BANQUET OF THE FRUITERERS' COMPANY.**—The Master and Wardens of the Fruiterers' Company are chosen on St. Paul's day, January 25th, and the Lord Mayor is entertained at the banquet. This was held in the Whitehall rooms of the Hotel Métropole, the Court and Liverymen of the Company assembling on the occasion. In the unavoidable absence of the Master, H. Martin, Esq., H. R. Williams, Esq., P.M., ably presided. The Very Rev. Dean Hole, Hon. Chaplain of the Company, was present, and the list of ninety guests, published in the *City Press*, contains the names of Messrs. G. Bunyard, J. Cheal, T. F. Rivers, and J. Wright. The Lord Mayor, H. S. Foster, Esq. M.P., Mr. Alderman and Sheriff Renals (Renter Warden), and the Chairman were the chief speakers, the latter founding an excellent address on the returns he had received from the Board of Agriculture, published on page 74 last week.

— **EDUCATION FOR GARDENERS.**—A correspondent writes:—"There are so many efforts being now put forth to promote wider knowledge of horticulture generally that it is to be hoped special endeavours will be made in the interest of gardeners. It does seem as if County Councils are far from being indifferent to the requirements of gardeners, and in numerous cases have given gardeners' associations the help of paid lecturers. Capital work also has been done through the aid of garden demonstrations during the summer months, and in that direction much more might very well be accomplished were members of gardeners' associations to make it the practice to visit in numbers some of the best gardens, nurseries, and market establishments available, and there have the assistance of competent demonstrators of higher or more excellent garden practice. Such visits as now take place are usually of too pleasurable a kind, and whilst that is good something really instructive would be better."

— **TEIGNMOUTH GARDENERS' IMPROVEMENT ASSOCIATION.**—A PRESENTATION.—At the fortnightly meeting of the Teignmouth Gardeners' Mutual Improvement Association, held on Tuesday, 24th inst., Mr. S. Deadman, who for sixteen years has been head gardener at Gorway, the residence of the late John Whidbourn, Esq., was presented with a very handsome sixteen-day marble timepiece in recognition of his services to the Association. Mr. J. Colman, as the presiding Chairman for the evening, made the presentation, and said that the members felt that they could not allow Mr. Deadman to leave the town without a slight recognition of his kindness and energy on behalf of their Association. He simply expressed the wish of every member that Mr. Deadman would have good health, and be successful in his future career wherever he may reside. The Association have reason to regret the loss of so valuable a member, who had so often given them able and instructive papers on fruit culture. Mr. Deadman briefly thanked the members for their expression of the humble services he had rendered, said whatever value had been set on the papers he had given, that some good would be the outcome of his efforts, whilst wishing the Teignmouth Association every prosperity. Mr. Deadman is a thorough practical gardener, and the Association hope he will soon meet with a suitable situation.

— **LEICESTER CHRYSANTHEMUM SOCIETY.**—The annual general meeting of the members of the Leicester Chrysanthemum Society was held on Thursday, 25th ult. The President, Ald. T. Wright, occupied the chair. Mr. W. Bell, the Hon. Secretary, read the annual report, which showed that during the year there has been a steady increase in the number of members and in the amount subscribed. Last year there were 263 members, subscribing £63 10s. This year there are 267 members, subscribing £67 17s. At the Exhibition held on November 11th and 12th there were 190 entries. A gift of thirty books on fruit culture from Sir James Whitehead, Bart., M.P., was very much appreciated by those members who were fortunate enough to receive one. The balance-sheet showed total receipts amounting to £130 11s. 4½d., expenses amounting to £130 11s. 0½d. A vote of thanks was passed to Mr. W. Bell, the Hon. Sec., on the motion of Ald. Wright, who spoke in high terms of the hard work he had given in the promotion of the Society's interests, and general regret was expressed at his retirement.

— **LIVERPOOL HORTICULTURAL ASSOCIATION.**—On Saturday evening the annual general meeting of the above Association was held in the lecture room of the Museum, William Brown Street. Mr. T. White, the Chairman of the Association, presided, and there was a large attendance of members. Reference was made in the report to the loss the Association had sustained by the death of the late Mr. A. R. Cox, who was a most useful member of the Committee. The report was passed, the financial statement showing a balance in hand of £134 0s. 3d. A vote of thanks was accorded to all past officers for their services during the year. Robert Holt, Esq., Mayor of Liverpool, was appointed Hon. President; W. Fletcher Rogers was re-elected Hon. Treasurer; Mr. G. Blackmore Sub-Treasurer; Mr. Wm. Dickson, 25, Victoria Street, Liverpool, Secretary; and Messrs. Woolley, Playfair, B. Cromwell, J. Madeley, J. Bounds, J. Lowndes, D. H. Johns, T. D. Heany, and Thos. Healey were selected to fill the vacancies on the Committee. A sum of 3 guineas was voted to the Gardeners' Royal Benevolent Institution, and 2 guineas to the Gardeners' Orphan Fund. The spring Show will be held in St. George's Hall on March 14th and 15th, and the summer Show July 26th and 27th. A vote of thanks to the Chairman terminated the proceedings.—R. P. R.

— **HYBRIDISATION AND IMPROVEMENT OF PLANTS.**—Under the auspices of the Scottish Horticultural Association, Dr. J. H. Wilson recently delivered a lecture on the "Hybridisation and Improvement of Plants." After glancing at the early history of the art of hybridisation, reference was made by the lecturer to the great advances of recent times in the improvement of flowers and fruit by its aid. Undeniably there had been much success by haphazard work; it were better, however, to pursue surer and more scientific methods. By a hybrid was ordinarily meant the plant resulting from the fertilisation of the flower of one species by that of another. In a few cases a result essentially comparable had been attained by grafting one species on another, but this method was not reliable. On the other hand, the nature of the hybrid, resulting from the crossing of flowers, could in most cases be approximately anticipated. It, therefore, lay within the power of the operator to attain a certain ideal of form and colour by skilfully blending certain parental characters. The lecturer having fully described a simple flower, and the means whereby seed could be procured, discussed the precautions necessary to the successful fertilisation and hybridisation of well known garden plants. The extremely intimate union of the characters of the parents in hybrid offspring was shown by lantern transparencies of microscopic preparations of new hybrids raised by the lecturer.

— **NORFOLK AND NORWICH HORTICULTURAL SOCIETY.**—The annual meeting of this Society was held at the Guildhall recently under the presidency of the Mayor (Mr. A. R. Chamberlain). The Hon. Secretary read the statement of accounts, from which it appeared that the balance in hand at the beginning of last year was £88 14s. 9d., but owing principally to inclement weather that prevailed at the time of the Rose Show the balance at present is £39 19s. 3d. The reserve fund amounted to £257 6s. 2d. The Chrysanthemum Show, according to the annual report, proved a greater success than ever, and it was extremely gratifying to find that its advance in every respect continued year after year to be so steady. For the first time an expert, Mr. Edwin Molyneux, of Swanmore Park, Bishops Waltham, was retained to judge the Chrysanthemums. His awards gave the utmost satisfaction both to the Committee and to the exhibitors. The report having been adopted, the following officers were elected:—President, Mr. G. F. Buxton; Vice-President, Mr. B. Le Neve Foster, Sennowc



Hall; Treasurer, Mr. S. G. Buxton. Committee: The Mayor, Mr. B. E. Fletcher, Mr. I. B. Coaks, Mr. E. A. Field, Sir Harry Bullard, the Rev. T. H. Marsh, Mr. G. Daniels, and Mr. F. Morris. Mr. J. Green, East Dereham, was elected to fill a vacancy caused by the retirement of Mr. W. Cork. Mr. J. E. T. Pollard was unanimously re-elected Hon. Secretary, with thanks for his invaluable services for the past five years. Messrs. A. W. Preston and W. H. Back were re-elected auditors.

— MEETINGS OF PROTEST AGAINST RAILWAY RATES.—A few of the leading market gardeners of Evesham and district met recently to consider the new railway rates. The following memorial to the Board of Trade was drawn up, and instructions given for the same to be distributed in the district for signatures of those interested in the matter:—"To the President of the Board of Trade. Sir,—We, the undersigned memorialists, being market gardeners and farmers of Evesham and district, desire respectfully to call the attention of the President of the Board of Trade to the grievous injustice inflicted on the market gardening and farming interest by the arbitrary raising of rates by the Midland and Great Western Railway Companies. Competition being now so keen that even the late rates were too high in comparison to the value of the articles, any increase will be simply ruinous to the market gardening and farming interest." The members of the London Wholesale Seed Trade Association also held a meeting on the 20th ult. to protest against the new rates. Amongst other firms represented were Messrs. Hurst & Sons, Watkins & Simpson, Cooper, Taber, & Co., J. Wrench & Sons, and Nutting & Sons. A great meeting was held at the Mansion House on Monday, the Lord Mayor presiding. Sir James Whitehead, M.P., proposed the following resolution, which was carried unanimously:—"That this meeting of traders and agriculturists, from all parts of the United Kingdom, is of opinion that, in view of the persistent efforts made by the railway companies for many years past to secure additional powers of charge, the large and general increase in rates which they have recently made (in spite of their frequent denial of any intention to do so, and immediately after obtaining such powers) has shown conclusively that the fixing of actual rates ought not to be left to their irresponsible discretion."

— R.H.S. CERTIFICATES, 1892. — General Distribution. — The wide area over which the certificates of the Royal Horticultural Society are distributed, for plants and products examined by its Committees, is shown in the following facts. First as to countries, we find that one certificate went to Africa, one to America, one to Belgium, 380 to England and Wales, six to France, three to Ireland, one to Jersey, and two to Scotland. Next referring to the English and Welsh county distribution, we find that two certificates went to Bedfordshire, twenty-one to Berkshire, ten to Buckinghamshire, one to Cambridgeshire, two to Derbyshire, two to Devonshire, one to Dorsetshire, nine to Essex, seventeen to Gloucestershire, five to Hampshire, one to Herefordshire, fifty to Hertfordshire, forty-nine to Kent, ten to Lancashire, two to Leicestershire, two to Lincolnshire, eighty-six to Middlesex, fifteen to Monmouth, two to Norfolk, one to Northamptonshire, eight to Northumberland, six to Nottinghamshire, one to Oxfordshire, one to Shropshire, thirteen to Somersetshire, five to Staffordshire, thirty-eight to Surrey, one to Warwickshire, four to Wiltshire, two to Worcestershire, seven to Yorkshire. As is inevitable, England as a nation takes the lead and naturally exhibits from the home counties, because of the convenience of short distances for travel and transit to the meetings, receive more certificates than the fewer exhibits could possibly do from distant parts of the country, yet Gloucestershire, Monmouthshire, Somersetshire, and Lancashire appear to have done remarkably well. There is this to be said about the honours of the Society, that the merits of the products are *alone* considered, and the Committees would as readily certificate a plant from Kilkenny as from Kew, a fruit from Kentucky as from Kent, or a vegetable from Fiji as from Fulham; so send them along.



LYCASTE BARRINGTONIÆ.

ALTHOUGH one of the oldest members of the genus this *Lycaeste* is but seldom met with under cultivation. This is no

doubt due in a great measure to the utter absence of the bright tints common in *L. Skinneri* and the more popular kinds, the flowers being of a uniform greenish-white colour. The freedom with which they are produced, however, compensates for their dull hue, and a well-flowered specimen, especially of the variety *grandiflora*, is by no means an unattractive object. *L. Barringtoniæ* was introduced from Jamaica about 1790, and has been in turn named *Epidendrum*, *Dendrobium*, *Colax*, and *Maxillaria*. A fine plant with fifteen flowers may be now seen in the Orchid houses at Kew.

The variety *grandiflora* was introduced in 1868. It is the largest of the *Lycastes*, having leaves 2 feet or more in length, and flowers as much as 5 inches in diameter. It is figured in the "Botanical Magazine," t. 5706.

#### ONCIDIUM SPLENDIDUM.

The specific name of this *Oncidium* is in no way exaggerated or misleading. Sir J. D. Hooker described the plant in 1871 as "without doubt the finest *Oncidium* hitherto discovered," and even at the present day this description requires no qualification. A native of Mexico and Guatemala, *O. splendidum* was introduced in 1862, but it is only within the past two or three years that it has become at all plentiful. The fleshy deep green leaves are oblong, 6 inches to 1 foot in length, and about 2½ inches broad. The scape is stout and erect, about 2 feet in length, and terminates in a many flowered branching raceme. The flowers are about 2 inches in diameter and very showy. The sepals and petals are yellow blotched and barred with brown; the lip is very large, flat, and entirely yellow. This *Oncidium* should be grown in a basket or on a block; it requires a stove temperature. It is figured in the "Botanical Magazine," t. 5878, as a variety of *O. tigrinum*, and in the accompanying description, by a curious error, the leaves are said to be "2½ feet broad."

#### BULBOPHYLLUM COMOSUM.

Very few of the *Bulbophyllums* are considered worthy of a place in the Orchid collections of the present day, and such as are occasionally met with are cultivated more for some peculiarity in the structure and appearance of the flowers than for their beauty. The species under notice, however, is a graceful and attractive little plant, which may attain a greater measure of popularity than its congeners. It is a recent introduction from Upper Burmah, and was exhibited at the last meeting of the Orchid Committee of the Royal Horticultural Society, when it received a botanical certificate. It is a deciduous species, and blooms before the leaves make their appearance. The creamy-white flowers are individually small, but are thickly crowded on the pendulous racemes, the peduncles of which are erect until the flowers are reached. The sepals and petals are fringed with hairs, which give a light feathery appearance to the racemes. A plant has been in flower for some time in the warm Orchid house at Kew.—A. B.

#### ZYGOCOLAX VEITCHI.

ONE of the most admired of all the Orchids exhibited at the Drill Hall on January 17th was the beautiful bigeneric hybrid represented by fig. 13, page 87. *Zygocolax Veitchi* is the result of a cross between *Colax jugosus* and *Zygopetalum Mackayi* var. *crinitum*, the former being the pollen and the latter the seed parent. It is undoubtedly one of the happiest of the Veitchian hybridiser's efforts in the inter-crossing of Orchids, the blending of the characters of the two plants being effected in a most pleasing and harmonious manner. The form of the flower is accurately portrayed by the engraving; it will suffice, therefore, to describe the colouring. The sepals and petals are pale greenish yellow blotched with chocolate. The short, nearly flat, and very broad lip is pale lilac veined with rosy purple and margined with the same colour. The habit is dwarf, the pseudo-bulbs short and blunt, the leaves, as shown, long and narrow. There is a strong suggestion of the *Zygopetalum* parentage about the hybrid, but it is, as it were, modified and toned down, the contour of the flower being improved by the "Colax blood." In every respect *Zygocolax Veitchi* is a beautiful and charming Orchid, and a distinct triumph of the hybridiser.

#### CYCNOCHES PENTADACTYLON.

The special feature—one might almost write the sensation—of the last meeting of the R.H.S. was a magnificent plant of this species of the Swan Orchid, exhibited by W. W. Mann, Esq., Ravenswood, Bexley (gardener, Mr. Simmonds). On the score of novelty it could not have attracted attention, for the plant is an old one, and has been often seen; but its dimensions and inflorescence were so remarkable that it became the centre of attraction, and was awarded a first-class certificate by the Committee. It had



three very vigorous stems, the largest being nearly a foot long, and about  $3\frac{1}{2}$  inches in circumference. It bore five long racemes of blooms—in fact the plant was almost smothered in wreaths and

of green, and barred with reddish chocolate. The lip is very narrow and clawed, the narrow tubular column curving upwards below it, and expanding towards the tip. The flower is both



FIG. 14.—CYCNOCHES PENIADACTYLON.

flowers, and produced a beautiful effect. Fig. 14 represents one of the racemes. The flower, as will be seen by a reference to the engraving, has narrow sepals and petals, creamy white with tinges

pleasing and peculiar, and in anything approaching the condition of Mr. Mann's remarkable specimen the plant would be undeniably effective.





J. H. TAYLOR.

MESSRS. PITCHER & MANDA send us a bloom of this new American variety, which they consider one of the best for late work. They describe it as a great advance on Miss L. Cartledge. The plant is said to possess a robust constitution, yet is of a dwarf habit, and the flowers last in perfection a long time. This variety, it is stated, was shown last November at the Royal Aquarium, and has been flowering the whole time since. The bloom received is good, and the colouring attractive, the centre florets being creamy white, and the outer ones deep pink.

L. CANNING.

Is there not a mistake in naming this variety Lord Canning? If I mistake not it is the same sort we grow for late flowering, as the description answers so closely to the one under that name, which is an American variety sent to this country during, I think, the spring of 1890. In the autumn of that year I saw a splendid bloom of it in the nursery of Mr. Morton in Darlington, but since that time I have not seen a good flower. I have given up trying to produce large blooms, and now grow the variety for late flowering only, it being one of the best for that purpose. It is pure in colour and of even form, therefore well suited for decoration in a cut state. When cultivated on the large bloom plan it had a peculiarity of going blind in the point of the shoots instead of showing a crown bud in the ordinary way. This, I think, is the general experience of growers. However, by this we have gained a good late-flowering variety, which is, perhaps, of greater importance than for the sake of the exhibition table. We top our plants when 4 inches high, afterwards allow them to grow uninterruptedly, and produce as much bloom as they think fit. Disbudding is not practised.—E. M.

MRS. L. C. MADEIRA.

Is there not a mistake made in classing this variety as a Japanese on page 54? I cannot find it catalogued as belonging to this section. Mr. Owen staged three blooms of it at the Drill Hall in London on January 17th, to which the Floral Committee of the Royal Horticultural Society gave no award. The blooms in question were closely incurved, reminding one very much of Mabel Ward in the form of their florets, but which are narrow and pointed, and the manner of incurving. The colour is a rich orange yellow. It promises to be a good late flowering variety. It appears to have been highly thought of in America, judging from the honours it has received in that country.—E. M.

JOHN LAMBERT.

LIKE a "Yorkshire Bit," I have watched this wordy duel, and have no desire to say one word either for Mr. Molyneux or Mr. Lambert; both are equally qualified to hold their own, but in all fairness to the variety John Lambert I should like to state my opinion, and that is I consider it far superior in form and much more reliable than the old Golden Queen or Emily Dale. After I grew John Lambert side by side with those varieties I was so well pleased with the new comer that I at once threw the older stock away. So far as I can judge, Mr. Lambert only claims for his namesake that it is an improved form; in that I readily support him, for it is "form" we require, the same as in John Doughty being an improved form of that flat reflexing variety Bronze Queen; but Chrysanthemum growers, as a body, well know which varieties are best after a three-years test.—J. D.

#### INCREASED SIZE OF SHOW STANDS.

THE letters of "Sadoc" (page 55) and "D." (page 76) again raise the question of an authoritative increase of the size of the stands for the exhibition of Japanese blooms. As I am one of those who differ from "Sadoc's" estimate of conferences, and am rather inclined to the belief that the conclusions arrived at by a large body of experts are not likely to be of less value than the expressions of opinion of a single individual, I think it scarcely necessary to again traverse the ground covered by the late conference on show boards; suffice it that, practically, all the points mooted by "Sadoc" were raised and considered at the conference, and by an overwhelming majority decided in a sense adverse to the views of your correspondent.

"D." tells us that "it has already been so conclusively shown that there is no need whatever for the increase in size of the stands that it is almost certain in a year or two we shall hear no more about it." It would indeed be interesting to learn when and where it has been so "conclusively shown." A sweeping and confident assertion will scarcely adequately supply the place of proof. Although a very steady reader of the horticultural papers I have seen no signs of the conclusion so dogmatically alleged.

So far as I am aware the matter stands thus. Of the thirty-seven representative exhibitors consulted by Mr. R. Falconer Jameson, thirty-five appear to have assented to the principle of the necessity for an increase. At the N.C.S.'s conference thirty-eight voted for and only seven against the resolution to adopt, compulsorily, the new standard

size proposed by Mr. Drover—namely, with 7-inch intervals between the holes (centre to centre), and I understand that the opposition of some of the dissentients was directed rather against the principle of compulsion than against the desirability of an increase.

Mr. H. Brown, in his very able letter, page 76, tells us that in his experience "90 per cent. of growers are in favour of reform." If I may substitute "leading exhibitors," whom the question practically alone concerns, for "growers," I can add my testimony to the like effect. There are of necessity a large body of growers who never, or rarely, enter the charmed circle of prizewinners, to whom the retention of a system which enables smaller blooms to be displayed to better relative advantage would doubtless be very welcome, and there is the "smart" exhibitor referred to by Mr. Brown; and I would ask is Mr. Brown's letter exactly indicative of that speedy burying of the question which "D." manages to persuade himself lies in the near future?

Upon one point, however, I find myself able to agree with both "Sadoc" and "D." The former tells us that "it will never do to allow all (exhibitors) to employ whatever size they thought fit," and "D." adds that "if exhibitors are allowed to have boxes for Japanese flowers up to any size they like there will be chaos." Exactly, and I would add that nothing can be more undesirable, or calculated to confuse and mislead the Judges than to have, as was the case in a leading Japanese class at the late November Show of the N.C.S., certain of the competitors using the new conference stand, others the old standard size, while another exhibitor had a stand with the intervals midway between the two—namely, 6½ inches.

So long as the law of "comparison under unequal conditions" remains—and Nature's laws have a way of holding their own, even in face the most sweeping assurances to the contrary—so long will such a condition as I have described militate very greatly against the formation of an accurate judgment upon the several exhibits. I think that during the present transitional period, and until a larger standard size shall, either by authority or by growing usage, become universal, the exhibitor should have the alternative only of the present 6-inch size or that of the "Conference" stand. All other sizes should be prohibited.

I wish that I could agree with "D." that a limitation of the size of the board could restrain the rage for more bigness, but with the practical evidence of the audit of last season's shows before us, it is impossible to assent to the conclusions of your correspondent.

It is true that "style" and "refinement" have recently received in some quarters more pointed recognition, but when we have before us the fact that very many of last season's novelties give to us all that can be desired in these directions, and yet have the added quality of giant size, the last argument against the adoption of a show stand large enough to permit of a proper and critical judgment of the exhibit must disappear.—S.

#### NATIONAL CHRYSANTHEMUM SOCIETY.

##### THREE-DAYS EXHIBITIONS.

I WAS fully in accord with the N.C.S. in holding a three or four-day Exhibition to celebrate the centenary of the Chrysanthemum; but what exhibitor ever expected a continuation of a three-days Exhibition? They rightly choose the best dates in November for a Show, but exhibitors from a distance are (if they show at the N.C.S.) practically debarred from exhibiting elsewhere, as the preparation for going to the N.C.S. and the return journey take up the best part of the week. Perhaps the three-days Show is to suit the Aquarium Company; if so, and exhibitors dislike it, they have the remedy—"don't go." Then how about the increase of membership? Members will not continue unless they are partly considered, and I am not aware that a single member has been asked his sanction to such a waste of time alteration. The Crystal Palace Company have an excellent Show (only two days), and exhibitors from a distance are able to leave in sufficient time to reach their destination the same evening. The N.C.S. Committee are elected to carry out the work of the Society, and no one grudges them their onerous duties; neither do I wish to be dictatorial, but I, with many others, look for consideration. Shall we get it when the schedule comes out? and will its issue be deferred till the Committee have settled the Beauty of Exmouth case?—J. DOUGHTY.

##### THE BEAUTY OF EXMOUTH CASE STILL UNSETTLED.

ALLOW me to thank Mr. Harman Payne for answering my query, or at least as far as he was able to do so; but I am sure the majority of readers will consider the answer a most unsatisfactory one. It amounts to this. The General Committee acted in a straightforward manner, and, on the spur of the moment, the sub-Committee thought it best to act with greater caution, and consulted a lawyer. The Committees and both cases are in connection with one Society, and there is also another similarity in both cases. The difference in the cases is this, Mr. Wells repeatedly requested the Secretary to lay his complaint before the Committee, but he (the Secretary) declined to do so. Mr. Wells took other measures, and brought the matter before the General Committee in such a manner that the affair could not be smothered, and the result is such that says little for the wisdom of the Chairman and Secretary.

In the Beauty of Exmouth case a sub-Committee was appointed who wished the public to believe they could not investigate the affair until the name of the member complained of was before them. Then, so it states, a lawyer was consulted as to whether it would be libellous to "investigate" the charge any farther, and he advises the sub-Committee to cease further action. I do not wonder at Mr. Harman Payne



disclaiming credit for giving such advice (perhaps all did not know Mr. H. P. is a lawyer). Will Mr. Harman Payne say how the sub-Committee received the advice? Are they lamenting in sackcloth and ashes the block to further investigation?

I have consulted a lawyer, and he informs me that it is ridiculous to assert that any society cannot freely investigate a charge of irregularity on the part of its members, especially when such charge is likely to injure the character of the Society. He says there is nothing libellous in it, and the Society runs no risk whatsoever.

Mr. Harman Payne says there is a vast difference between Mr. Wells' case and mine. Mr. Wells had documentary evidence to prove his; then why, may I ask, did not the sub-Committee give me an opportunity to produce what evidence I was able to in support of the charge?

Can anyone tell us who suggested the appointment of a sub-Committee? My own opinion is that had the General Committee investigated the affair we should have heard nothing about consulting a lawyer. Mr. Dean in a letter informed me that it was very likely I should be called upon to substantiate the charge. As yet I have heard nothing more about it. I really think, if the offending member must be shielded, it should not be at the expense of the innocent members of the Floral Committee, for it is quite likely that some of the trade growers are being accused wrongfully. Was this why Mr. Cannell wrote?—W. J. GODFREY, F.R.H.S., *The Nurseries, Exmouth.*

THAT my name has appeared in your papers in connection with this case, and being a member of the N.C.S. Floral Committee, will be sufficient apology for my writing a few lines upon this subject. I do so if possible in the hope of clearing up some of the errors into which several of your correspondents have fallen. The length of time that this matter has been under discussion, coupled with the many side issues which have been introduced, has no doubt been the cause of the very hazy ideas many of your readers and correspondents must have of the real facts. With the side issues I have nothing to do, and will confine myself to the complaints of Mr. Godfrey and Mr. Wells; and I will first deal with the complaint of the former as being to my mind the more serious of the two, although that of the latter was brought to the notice of the Secretary some three weeks before the Godfrey incident occurred.

On the 20th October, 1892, you published a short notice that you had just received a complaint against a member of the N.C.S. Floral Committee, and at a meeting of the General Committee on the 24th October, which had been previously convened, our attention was called to this paragraph, and at the suggestion of the Chairman, the five officers were appointed as a sub-Committee to inquire into the subject. Mr. Godfrey's letter of complaint was at that time in the possession of the Chairman, but I, as well as the other members of the General Committee present, was quite in ignorance as to the meaning of the notice, except that it was a complaint against a member of the Floral Committee, to which I have the honour to belong; and we accepted his suggestion that these officers should inquire into the matter, feeling that they would do what was necessary to protect the good name of the Society and denounce the member if he had really acted discreditably.

The appointment of this sub-Committee was made on the 24th October, and although the matter was of considerable importance and required prompt attention, they did not present their report until eight weeks had elapsed, having held three meetings in the meantime.

Their report (save the mark!) simply recommended that no further action be taken in the matter.

Now, to my mind, this was most unsatisfactory, and as I have given much of my time to the Society on Committees, sub-Committees, &c., I consider I have a right to look to the officers to protect me and other members of the Floral Committee when accusations of this description are hurled at that body; and for this reason I took upon myself at the meeting on the 19th December to go into the matter at great length in order to point out to the General Committee my disapproval of the conduct of the sub-Committee, and gave reasons why I should vote against the adoption of that report. Several of the Committee spoke agreeing with my remarks; many of them were of my opinion, but few indeed have the courage of their convictions, and it is a curious fact that not one of the remaining fourteen of my fellow Floral Committee-men uttered a remark either in favour of or against my comments.

There is one thing this sub-Committee entirely lost sight of, and that was the wording of the resolution of the General Committee appointing them to "inquire into the subject." Had this resolution read to "inquire into the subject and report to General Committee the best way they could shuffle out of it" we could have understood their report.

Then, again, much nonsense has been both written and talked about publishing the name of the offender, and I do not hesitate to say that there never has been any necessity for publishing his name. Mr. Godfrey's letter, published in your paper, sets out without a doubt that he is a trade grower, and surely none of us are hard-hearted enough to wish to injure a man in his business, whatever his shortcomings may be. A report from the sub-Committee, either condemning the acts of the member complained of, or setting out that after investigation the Committee had found the charges were unfounded, is the kind of report which would have done more credit to five business men such as formed this sub-Committee. But as the matter now stands, a serious charge has been made against a body of men of having one among them who, in his capacity as a member of the N.C.S. Floral Committee, acts dishonourably, and this charge remains unanswered.

Finding the cry of "publish his name" does not have the desired effect of putting an end to the heckling the N.C.S. receive at the hands

of your correspondents, they then proceed to raise the libel ghost as their excuse for allowing the members of their Floral Committee to be dragged through the mud consequent upon the act of one of its members. This cry I have no hesitation in saying had great weight with the majority of the General Committee, and helped the sub-Committee in carrying a resolution adopting their report; and I would remind the sub-Committee if they are so ignorant of the law of libel, that an opinion expressed honestly, fairly, and without malice, is not libellous. Libel may be defined as a tortuous act consisting in the malicious defamation of another made public by writing, printing, pictures, or effigy, in such a manner to expose him to public hatred, contempt, ridicule, reproach, or ignomy. Any fool can institute an action for libel, but to entitle a person to succeed he must prove the publication was not made honestly, fairly, and without malice.

The Wells incident also requires a little explanation to make it clear to many of your readers. About the 1st October Mr. Wells received from a member of the N.C.S. Floral Committee a letter, in which the following words occur:—"I have been expecting to hear from you in respect to my account, which I trust will be paid before long . . . . I shall certainly take steps to prevent you showing among us at the National Chrysanthemum Society if the account is not paid." This letter was placed before the officers of the N.C.S. by Mr. Wells, but notwithstanding the fact that this was a direct abuse of the trust placed in this person when elected a member of the Floral Committee, the officers declined to interfere, and the complaint was not brought before the Society. Upon this Mr. Wells sent round to the members of the N.C.S. a circular to air his grievance, as he could obtain no other redress. One of these circulars reached me, whereupon I obtained a copy of the correspondence, and brought the matter before the General Committee at their meeting on the 19th December last.

Mr. Harman Payne is quite correct in his statement that the two cases came before two separate Committees, but this requires some little explanation. Mr. Godfrey's complaint reached the General Committee on the 24th October, whereupon they appointed a sub-Committee; but Mr. Wells' complaint was never mentioned to the General Committee, although it had been known to the officers since the first week in October. Therefore the General Committee on the 24th October having had one exhibition of the careful way a sub-Committee of officers watched over the good name of the Society, took upon themselves to express an opinion in this case, and on a motion made by myself, a resolution condemning the acts of the member complained of was carried. If anyone is to blame for not naming the individual I accept that responsibility myself, for as I before said, there is no necessity to name him; he no doubt reads the gardening papers, and I venture to think he will not again abuse the position he occupies.

I have given notice that at the annual general meeting to be held on the 20th February I will move the adoption of a new rule, by which any member guilty of irregular conduct may be expelled, and I trust that every member of the Society who can will attend at Anderton's Hotel on the occasion and support this motion.—GEO. S. ADDISON.

[We also know on high legal authority that the publication of the name of the person mentioned in Mr. Godfrey's letter in the first instance was not in the least necessary for the purposes of official investigation. We could have published the letter, but had no wish to do so; and with the object of having the matter settled amicably by the officials this letter was, with Mr. Godfrey's ready consent, placed in the hands of the Treasurer. We had in view a complete investigation, and this we thought would be welcome to all persons concerned.]

We were bound to intimate our possession of this letter, in which the action of two persons was objected to, because both the Secretary and the Treasurer of the N.C.S. had written (the former on October 3rd, and the latter on October 8th) declining an investigation as requested by Mr. Wells into the conduct of a member of the Floral Committee—conduct which when it was known to the General Committee was denounced.

No public journalists worthy of the name could permit themselves to share the responsibility of preventing an inquiry into an alleged grievance of a serious nature stated in specific terms; and as we were aware of a strong undercurrent of disquietude we thought the time and opportunity had arrived for an examination into the allegations on their merits without anything approaching the publicity the case has assumed, and which might have been so easily prevented.

Whether Mr. Godfrey was right or wrong in his allegations was and is a matter of indifference to us; but we are of opinion that if he was wrong, the Committee should have found that out by examination. As the discussion has proceeded no one can have failed to observe the strong desire of Mr. Godfrey for searching inquiry, and he has frankly offered to waive all legal rights he may have, as suggested by Mr. Fowler, conditionally that every person implicated would do the same. Why was not this strictly fair and reasonable proposition accepted? The whole disturbing question might have been settled long ago on that basis.

It is to be presumed that no members will object to Mr. Addison's new rule who do not fear expulsion for irregularity, and it may, therefore, be expected to be unanimously adopted.]

#### MR. GODFREY'S CHALLENGE.

AFTER reading Mr. Godfrey's manly and straightforward letter in your issue of the 19th inst. (page 54), I quite expected this week to find that the challenge had been accepted; but instead a long letter from



Mr. Harman Payne, trying to explain the difference between "tweedledum and tweedledee."

Your correspondent also takes Mr. Godfrey to task for saying a few weeks since he would leave no stone unturned to clear himself—that is, if necessary, to take legal proceedings; but Mr. Godfrey frankly waived his right to accept the most fair proposition of Mr. Fowler.

No long letters, no legal quibbling can do away with the fact that Mr. Godfrey's challenge has not been accepted, and the readers of your paper must and will judge for themselves who is in the strongest position.

I am afraid after the Wells exposure and Mr. Godfrey's Beauty of Exmouth case that many members of the N.C.S. will lose confidence in the impartiality of the officials, who have no right to favour one member of the Society more than another.—A GROWER.

[We add, a good grower too, and the bearer of a well-known name in the Chrysanthemum world.]

## CANKER—PROPOSED EXPERIMENTS.

(Continued from page 69.)

As indicated last week, I now propose a few experiments that may be usefully made by Mr. Kruse or others who may be able to carry them out.

Take six Hawthornden Apple trees on English Paradise stocks, clean, healthy, with a few blossom buds, and a convenient size for potting—say, three years from the bud; also take three trees infected with canker.

Experiment I.—Pot three of the healthy trees, the roots free from earth, in drift sand, draining the pots well, and making the sand firm. Preserve all the roots possible. Stand each pot on two bricks, placed a little distance apart, and so that the aperture of the pot is free, then surround the pots with ashes, bringing them up level with their rims, the site being open, but sheltered from winds. Label the trees 1, 2, 3. Prepare a nutrient solution as follows:—Nitrate of calcium, sulphate of ammonia, and nitrate of potash 1 oz. each, water 30 gallons, mix. Water all the trees with rain water until the buds commence swelling, then keep the sand regularly moistened with the nutrient solution, and when the leaves are fairly developed they may be found pale and yellowish. Add 1 oz. of sulphate of iron to the preceding solution, and water No. 1 and 2 trees therewith for a fortnight, when, the leaves being still pale and yellowish—an indication that there has not been any increase of the chlorophyll—add 4 ozs. of disodium phosphate to the solution last named, taking proper proportions of the elements and water in all the formulas, and water No. 1 tree with it. In a week's time the leaves of this tree will have acquired a deep green colour, proof that iron alone is not sufficient to increase the chlorophyll, nor energise the protoplasm, so as to cause cell division, for until the phosphorus is introduced the sulphur of the iron sulphate is practically inert.

No. 2 tree—still watered with the ammoniac, calcic, ferric, and potassic solution—remain pale and yellowish in its leaves and young growths, also fruit (if any). No. 3 tree, so far, has been nourished by the ammoniac, calcic, and potassic solution, and its foliage is quite as good in size and colour as No. 2, yet pale and yellowish; add, therefore, 4 ozs. of disodium phosphate to the first-named solution (nitrate of calcium, sulphate of ammonia, and nitrate of potash), and water No. 3 tree with it. What then? In the course of a few days the growths (young) enlarge, cell division has taken place, the sulphur of the ammonium sulphate has combined with the phosphorus and energised the protoplasm, but there is not any pronounced increase of the chlorophyll. The trees may be treated according to the last régime given for each through the season and the difference in their growth, the perfection of their fruits (if any), the formation of buds, and the ripening of the wood will afford useful lessons. Only one tree will be satisfactory, that which has received a due supply of nitrogenous and mineral food—namely, No. 2. The foregoing experiments have been suggested by the researches of Hoppe-Seyler in 1879, and those of Herr C. Loew in 1892. They are practical deductions from the teaching of science, which it is high time the horticulturist should avail himself of, and Mr. Kruse seems earnest in the matter. He does not, however, state what cultivation his ground received before planting with fruit trees. Was it subsoil ploughed or trenched? If not, there is probably a plough pan—that is, a layer of aluminous and ferrous particles more or less cemented together by the lime dissolved and washed into the soil immediately below that cultivated by the plough. This is important for our purpose—the potting of the other three healthy trees; but I will presume that the soil has not had any special preparation mechanically for the fruit trees.

Experiment II.—Pot one of the healthy trees in the top 9 inches of soil, taken out squarely, label it No. 4; another in the top 15 inches, No. 5; the other in the top 21 inches, No. 6. Place the potted trees in a similar position to that described for those in Experiment I, and surround with ashes. Supply rain water to all as required until the buds commence swelling, for, from that time forward until the fruit is fully swelled, they require nourishment, and we propose to treat each tree differently, as follows:—No. 4, Water with the drainings of farmyard manure diluted to the colour of mild ale, paler rather than darker, at every alternate watering through the season. That is a complete manure for present needs. If that cannot be had, take the drainings of stables or cow houses, or both, urine chiefly composing the contents, and add a peck of fresh horse or cow manure to 20 gallons, mix, stir twice a

day, morning and evening, for two days, then add 100 gallons of water, straining before use through a coarse sack. If the last named substances cannot be had, dissolve 1 lb. of Peruvian guano in 20 gallons of water, and supply it to the tree. If the foliage, by the use of the nutrient solution just mentioned is not of a healthy green colour, but pale and sickly, iron and sulphur is wanted. We have them in soot, sulphate of ammonia, 3.58 per cent., and in sulphate of lime, 11.05 per cent., for sulphur, oxides of iron and alumina, 15.69 per cent., for iron; therefore form dry light soot into a thick paste with water, and use a tablespoonful to each gallon of water at every other watering, and occasionally after the leaves become, as they will, a deep green colour. That No. 4 tree will be healthy and fruitful in the current year and the next because well nourished, and we have proved that, if the tree carry deep green foliage by the use of stable or farmyard manure in liquid form, the soil contains enough iron and sulphur, and that farmyard manure is a proper application for such land without supplementary supplies of sulphur and iron, or they need only be supplied to augment the crops. We have also seen that sulphates of ammonia and lime and a supply of iron is beneficial where the foliage assumes a pale hue and does not form sufficient chlorophyll for health and profitable production.

No. 5 tree may be nourished by alternate waterings of rain water and sulphate of ammonia 1 oz. to 4 gallons of water, as the soil is well provided with potash, phosphoric acid and other elements, but I hardly anticipate this after midsummer, not on account of the lime, 3.91 per cent. being excessive, but because it is too little to form nitrate of calcium fast enough; therefore a supply of phosphatic and nitrogenic elements may be necessary, as they are, if the sulphate of ammonia is not sufficient. But it has served our purpose, if No. 5 tree does not flourish with the sulphate of ammonia it is not a proper dressing for Mr. Kruse's soil unless the iron is sealed in a pan, and it would be better to break it up and apply farmyard manure than waste money on sulphate of ammonia, for the iron would only seize and hold it fast, unless liberated by roots.

No. 6 tree, supplied with nitrate of potash, 1 oz. to 4 gallons of water and 2 ozs. of bone superphosphate to 4 gallons of water, mixed = 8 gallons, at every alternate watering, that is, rain-water once, then the mixture, followed by the rain water, and so on, ought to produce healthy, deep green foliage, and sturdy growth; if not the first, and the latter is stunted, supply nitrate of soda, 1 oz. to 4 gallons of water, with 1 dr. of sulphate of iron added to the nitrate solution, once a week instead of one of the other nutrient waterings. Healthy vigour must follow, and this mixture of manure is likely to meet Mr. Kruse's requirements.

Experiment III.—Two of the trees selected for this crucial test must have one or more abnormal swellings each, otherwise they are not cankered by *Nectria ditissima*, and no swelling or excrescence caused by American blight or woolly aphis must be mistaken for canker, though the latter likes a canker-infested wound, and is often associated with the fungus, which, by striving to enlarge the wound, causes the tree to push an abnormal amount of cellular matter to cover the wood, and that being tender the aphis can the easier abstract the tree's juices, so that both evils flourish together. If the trees have any aphis in the cankered wounds, dress them with methylated spirit; then cut out the whole seat of the canker in one tree, as described in a former communication, wash it with a 6 per cent. solution of sulphate of iron or carbolic acid, diluted with a dozen times its weight of water. Treat every cankered spot on that tree similarly, pot it, and label it No. 7. Pot the other tree just as it is—cankered, swelled abnormally around the wound or wounds, ticket it No. 8.

The other tree has some wounds not marked by abnormal excrescences, the new bark around the wounds being only slightly raised, pot it and attach a label No. 9. Afford these trees similar conditions to the other six trees.

No. 7 tree must have its wounds dressed when dry with some styptic to keep out the weather. Avoid all tars; shellac dissolved in alcohol is a capital dressing for all wounds or cuts on trees. Apply a plaster of cow manure and clay over every wound, reaching well over the bark, and renew as necessary throughout the summer. Also apply a little of the following mixture every fortnight from the time the buds move until October—5 ozs. bone superphosphate, 3 ozs. nitrate of potash, 1 oz. sulphate of lime, mix, and do not supply more than  $\frac{1}{2}$  oz. to a 12-inch pot. Afford an all-round manure as described for No. 4 tree at every alternate watering, except when the afore and after-mentioned top-dressings are applied, at which water only at that and the succeeding two waterings must be supplied. When the first leaves are fairly developed top-dressings may be given every other week, but not that in which the other is supplied, up to mid-July of Thomas' phosphate powder 10 ozs., nitrate of soda 5 ozs., and  $\frac{1}{2}$  oz. sulphate of iron, mix; dose,  $\frac{1}{2}$  oz. per 12-inch pot. Treat No. 8 and 9 precisely the same as No. 7. What are the results? No. 7 has put out a fine healthy callus, and covered over a large extent of the wound surface with beautiful new bark, and its growths are sturdy and full of promise. No. 8's excrescences have enlarged enormously; the tree has thrown out cellular substance all round the wound or wounds, and perhaps succeeded in entirely closing the gap and covered the wood with fresh bark. The tree has won. It may for a time hold its own, an unsightly swollen limb is the consequence, and outside that sooner or later the fungus will push its mycelium into the inner bark outside the swollen part of the limb and the smooth bark becomes discoloured, dead, and it cracks and peels off—the "fruits" of the fungus have been perfected, and are scattered by the winds. But the tree does not always cover over the cankered wound, especially in those of Ribston Pippin and



King of the Pippins, the callus being strongest and making most effort on the upper side of the wound, which does nothing but favour the fungus, the tree making spasmodic growths, a long strong shoot here and there; larger in leaf and better in colour than those of a tree free from cankerous attacks, whilst the other parts of the tree exhibit extreme weakness, and it is an unprofitable tree, as well as an eyesore.

No. 9 shows good progress in covering the wounds with new bark, yet slower than in the case of No. 7, from whence the canker had been incised and a healing plaster applied. There is, however, no abnormal swelling around the circumference of the wound, and, unless canker fungus spores enter that wound and it does not become a repository for wet and the wood decay, it will heal over in time, shorter or longer according to its size and the vigour of the tree, and bear fruit profitably indefinitely.

The trees must be kept clean by syringing occasionally, and an insecticide be promptly applied if insects appear on the foliage and young growths, for it is quite as necessary to keep parasites in subjection as to apply manures to the soil. Top-dressings of rich compost, partially decayed manure, and turfy loam must not be used in the experiments, for, however, essential to the cultivation of fruit trees in pots, the top-dressings would frustrate our ascertaining the capabilities of the soil, because the top-dressings are extraneous and contain more aliment than the soil itself: or 1, food in full measure and in assimilated form, therefore available for immediate absorption and nutrition; 2, increase the rooting area and so provide a number of rootlets in the best condition for absorbing nourishment; 3, the roots so encouraged enable the cultivator to supply double the amount of food to the trees it were possible to do were they restricted to the soil in which they were potted. Experiments, like medicine is taken, must be carried out in strict accordance with the instructions, and the *régime* prescribed be strictly adhered to, if the issue is to show well defined lines of safe guidance in practice. —G. ABBEY.

(To be continued.)

### WALDSTEINIA TRIFOLIA.

ALTHOUGH introduced into this country many years ago *Waldsteinia trifolia* (fig. 15) is not so widely known as it should be. For planting in all sorts of positions, either in exposed places on the rockery, or in the deep shade of woods, it will be found very useful, as it grows in both equally well.

It is also a very desirable plant for a place near the front of a mixed flower border. It is dwarf in habit, seldom attaining more than a foot in height. The loose corymbs of Buttercup-cup-like flowers are very attractive, and are developed profusely. The leaves, which are divided into three leaflets, are borne on creeping chiefly underground stems; they are slightly airy and serrated at the margins.

### NURSERY NOTES.

MESSRS. E. D. SHUTTLEWORTH & Co. (LD.).

PECKHAM RYE is near enough to London for a call to be made at Messrs. Shuttleworth's nursery there without a great sacrifice of time on the part of a busy man. The establishment is about half a mile from Honor Oak Station, on the L.C.D.Ry. The Company is a young one, and if the evidence of one's eyes is to be believed it is going ahead very fast. In addition to a number of existing houses, three structures, 100 feet by 36, are in course of erection, together with a range of pits and frames on original designs prepared by the active Chairman and Managing Director, Mr. Charles Hicks. The fact that the new houses are being erected by Messrs. Wrench & Co. is sufficient evidence of their quality. With the increased facilities at command the Company will have improved chances of coping with its rapidly growing trade.

Visitors to the International Horticultural Exhibition last year (where Messrs. Shuttleworth & Co. secured the highest honour which it was in the power of the Committee to award) and to the Drill Hall on various occasions can hardly have failed to remark the admirable condition in which the firm's plants are invariably exhibited. Many fine specimens were amongst them, but, large or small, they were all excellently grown. The same condition of things is observable in the Peckham Rye nursery. Health and cleanliness prevail throughout, and the ruling principles in force are such as demand respect. "Nothing is too small for attention, nothing too much trouble," forms one of the leading mottoes, if such it can be termed; and courteous attention, without importunity to purchase, is another point on which great stress is laid.

Palms and Cycads are very extensively grown. Such leading market kinds as *Latania borbonica*, *Areca lutescens*, *A. Baueri*, *Phoenix rupicola*, *P. flexuosa*, *P. tenuis*, *Cocos Weddelliana*, *Kentia Belmoreana*, *K. Forsteriana*, *K. Canterburyana*, *Corypha australis*, and *Geonoma gracilis* are cultivated in large numbers, and there are some very fine specimens of both the *Latania* and *Kentia Forsteriana* observable. *Cycas revoluta* is cultivated on a scale rarely seen. There are two large houses full of plants, all of goodly proportions and glistening with health. *Crotons* and *Dracenas* form another leading feature. There are some fine plants of *D. lineata* in tubs and a splendid stock of *D. Lindenii*, the plants

being numerous and finely coloured. *D. Goldieana* and others are also well represented. Amongst the *Crotons*, which are in beautiful condition, there are large stocks of *Reidi*, *Morti*, *Queen Victoria*, *Exquisite*, *Laingi*, and *gracillimum*. Messrs. Shuttleworth & Co. grow these plants extremely well, and in consideration of the fact that their popularity is increasing again, the policy is a wise one.

*Asparagus plumosus nanus* forms another "leading line" at Peckham Rye, there being abundance of clean and healthy young plants awaiting the orders that will come in due course. *Araucaria excelsa* and *A. glauca* are also in strong evidence, the former in particular. The stock is large and the plants in the best possible condition. *Aralia Sieboldi* and its variegated form are extensively cultivated, and nothing but praise can be found for the condition of the plants. *Aspidistra lurida variegata* is another plant in constant demand, and it is to be seen in the same



FIG. 15.—WALDSTEINIA TRIFOLIA.

condition as the others. Specially noteworthy are some stately plants of *Aralia Chabrieri*, with its dark glossy leafage and stems. It is particularly effective in a group of plants, and was prominent in Messrs. Shuttleworth's group at the Crystal Palace Chrysanthemum Show. Ferns have special attention, and the leading kinds are present in large numbers and good quality.

Amongst flowering plants are observable large numbers of *Azalea indica* and *mollis*. The latter is forced very extensively, and early batches are now coming into bloom. Lilies of the Valley are also forced on an enormous scale. Double Primulas for cutting and Carnations for stock, including the valuable Winter Cheer, hold prominent places. A number of plants of *Boronia megastigma* shed delicious fragrance in a large house. If Messrs. Shuttleworth's stock of it were distributed over as many amateurs' greenhouses what a delightful feature would be added to them. *Sonerila orientalis variegata* is not in full bloom, but its foliage is attractive, and a few stray blossoms bespeak its beauty when in flower. A very large number of *Gardenia intermedia* is grown, and the plants, which are pictures of health and cleanliness, are just plumping up their flower buds. Pot Roses, though not in bloom, are largely and well represented, while the same remark applies to *Eucharises*. Of Orchids large and healthy stocks of *Cattleyas*, *Cypripediums*, *Odontoglossums*, and other popular kinds are discoverable, numbers of spikes showing in a cool house.

Roses, fruit trees, shrubs, and hardy plants are not grown at the Peckham Rye Nursery but at Fleet in Hampshire, where another large establishment belonging to the firm exists. Of these the *Journal* representative can only speak from the specimens he has seen at the various shows. These, however, are sufficient to convince him that when the time for a journey from Fleet Street to Fleet arrives he will find there the same excellent practice as prevails in the London stronghold.



## EXHIBITING CARNATIONS AND OTHER FLOWERS.

LAST August at the great Horticultural Exhibition at Shrewsbury an exhibitor from Birmingham staged (not for competition) a fine display of 500 cut blooms of Carnations and Picotees with long stalks neatly arranged in small bottles, thus showing the character of the flowers as growing in pots or borders. This idea has evidently "caught on," for in the new schedule of the Shropshire Society a class has been made for a collection of Carnation and Picotee blooms shown with their own foliage and buds, not dressed in any way, and without ties or bands around the calyx or paper collars. The prizes offered are £5, £4, and £3, a silver medal of the Society to accompany the first prize, and a space of 9 feet by 6 feet is allowed for each collection. The date of the Exhibition, August 23rd and 24th, is too late for the southern growers, also late for those about Birmingham and south and west of it; but the more northern growers, especially those in Scotland, should be well in just then, and it is to be hoped that a fine display and a good competition will result. In such a class border varieties can be freely used; these are now being cultivated largely, and the display made last year to which I have alluded was very much admired. Plants in pots are not admissible, as the class is in the cut bloom division of the schedule.

It is well known that the Shrewsbury Show is always a remarkably fine one, and for two or three years past a strong one for cut flowers. This part of the annual Exhibition increased wonderfully last year, and will be still more developed this with such generous prizes. The Committee, with the two excellent Secretaries, Messrs. Adnitt and Naunton, are always ready to grasp any new ideas, and collections of various kinds of cut flowers now form an important feature. Liberal prizes, as in the class for Carnations, are offered for a collection of cut Roses, space 12 feet by 6 feet, for nurserymen only, and this gives an excellent opportunity for a display of all classes of Roses then in bloom; but the date is rather late for many of the summer blooming kinds. Still, there will be sure to be a good display, and an open field for taste in arrangement.

Collections of Dahlias, with a space of 15 feet by 6 feet for each, having just the same prizes offered, and the initial display of last August will, no doubt, lead to a much extended competition this year. Collections of Gladioli, Begonia blooms, have generous prizes offered for them, and there is an excellent class for a collection of hardy border flowers (annuals and shrubs excluded) to fill a space 15 feet by 6 feet, for nurserymen only.

I venture to say that the adoption of these collections will become very popular, for with my experience of a large exhibition in August last, when liberal prizes were offered for collections of Dahlias, we had seven splendid exhibits, each occupying a space of from 15 feet to 22 feet in length by 3 feet 6 inches wide, and much taste was displayed in arrangement. I may also add that at a great Rose show we purpose holding in Birmingham in July next, prizes will be offered for a collection of Rose blooms in a given space, in the hope of seeing included many old-fashioned garden Roses, climbers, Gallicas, Hybrid Chinas, and others seldom seen now.

The "collection" style of showing is also to be seen in great force at Shrewsbury with vegetables. It is always a wonderful display.—W. D.



## HARDY FRUIT GARDEN.

**Pruning and Nailing Wall Trees.**—Let this work be forwarded and completed before the stress in other departments of the garden commences. Another cogent reason for its early furtherance is the uncertainty of the weather. When mild and dry considerable progress can be made. Boards should be laid upon soil that is loose, damp, or liable to be pasty when trod upon. This facilitates the progress of the work. Trees that have had the proper amount of attention during preceding seasons will soon be disposed of. Old straggling neglected specimens can only have a start made in the attempt to renovate them, as they require patience, and more than one season's manipulation to bring them into form and fruitfulness. Some will need the expenditure of too much time and labour in order to renovate them without the promise of sufficient good resulting. These will be better cut back for grafting or grubbed up entirely, their place being taken with young trees of the same or better varieties, renewing or improving the soil, however, before doing so.

**Pears.**—With all forms of trees examine the main branches first to see that they are not too thickly placed. Those of horizontally trained trees on walls, or espaliers in the open, ought not to have branches closer together than 9 inches. The large branches of aged trees, as well as strong-growing varieties, are better placed for good cultural requirements when not nearer together than a foot.

**Spurs.**—The removal of crowded spurs, together with the shortening back of elongated clusters which project too far from the wall is more or less required every season. It is advantageous to have the fruiting

spurs as close to the wall as possible, in order that the blossoms and young fruit may have the aid of its protective influence. There are no benefits derived from long spurs.

**Position of Fruit Buds.**—In large projecting spurs the most fruitful buds are found at the extremities, while those lower down nearer the main branches are of no use whatever, from the fact that they constantly exist in a partially shaded position away from the developing influences of light and air. Well-placed back buds if allowed free access to better influences during the growing season would soon gather plumpness and be of service. The trees would also be improved in appearance.

**Renewing Spurs.**—Should a difficulty be found in securing suitably placed buds, or those present are too weak in character to be encouraged, it is advisable to shorten back the whole spur, leaving nothing but an inch of bare wood next to the main stem. Strong growths will follow, but by early disbudding and a judicious course of summer pruning, those retained will eventually form fruit buds of the right stamp. Much good results by not taking these extreme measures, but gradually shortening back the spurs year by year, thinning out the weakest buds at any time when it is seen they can be easily dispensed with.

**Thinning Spurs.**—Attention must be given to regulating the distance between the spurs. A crowded condition leads to each cluster spoiling its neighbour, and is the main cause of unsightly elongations.

**Laying in Young Wood.**—Old trees may often be made fruitful by laying in and encouraging young growth wherever room can be found for such without crowding. Lay in all leading growths their full length where space is not fully occupied. Trees with rather long shoots having prominent fruit buds at their extremities may be tied in close to branches or spurs.

**Shortening Side Growth.**—Shorten the side growths or foreright shoots produced during the summer back to one or two buds at their base. On well managed trees these are plump, and promising to develop into sturdy fruit buds.

**Apples.**—Apples are treated when trained on walls in much the same manner as Pears. If anything the main branches require more room, and the majority of varieties should have them not less than a foot apart. The leaves of Apple trees are larger, consequently the expanse of foliage rightly belonging to one fruit bud is greater; hence there is more risk of the leaves overlapping and shading each other. Unhealthy foliage of Apples soon becomes a prey to red spider, which quickly reduces the vitality of a tree, rendering healthy development impossible.

**Pyramids and Cordons.**—These and other forms of restricted trees need similar treatment as regards thinning of branches, spurs, and buds, removal of weak and dead wood.

**Standards.**—Thinning out is the main operation which these require, but frequently a considerable amount of spray must be cut clean out from among the branches. Shortening branches is an evil to be avoided as a rule. It is necessary, however, when branches infringe on adjoining trees.

**Plums and Cherries.**—Two methods of producing fruitfulness on wall-trained trees are usually productive of good results. They consist of a combination of spur-pruning and the annual laying-in of young wood, which maintain trees in vigorous condition. Regulate all best growths, and re-arrange the main branches if necessary. Some of the shoots may be tied over bare portions of the strong branches, others nailed where space permits. Old bearing wood cut out freely to make room for the younger growths being thinly trained. They usually bear the second year. Morello Cherries are excepted from this dual method, they bearing only on growths of the previous year, which should be carefully tied or nailed in now or earlier.

**Preparing Trees for Grafting.**—Old trees intended to be grafted in spring ought now to have their main branches reduced to near the parts where grafts will be inserted, as it is not wise to behead large trees for this purpose when the sap is rising.

**Scions for Grafting.**—It is necessary to secure these early. The shoots are now dormant, and must be kept so until the time for grafting comes. Select healthy portions of the previous year's wood, carefully label, and bury them two-thirds of their length in a cool position behind a north wall, where they will keep plump until wanted.

**Forking among Fruit Trees.**—Fork over the ground, and bury manure between trees and bushes where there is no danger of injuring fibres or roots. The spade is a barbarous implement, as often thoughtlessly used amongst fruit trees and bushes.

## FRUIT FORCING.

**Pines.**—The plants recently started into fruit should be allowed a temperature of 70° to 75° at night, 5° less when cold, admitting air in the daytime at 80°; then allow it to rise to 85° or 90°, and close for the day at 85°. The bottom heat must be kept steady at 85° or 90° for Queens, other varieties 5° less. The plants will produce strong suckers if in good health. When the suckers are large enough to handle all, except one to each plant, should have the growths checked by taking out the centres of those not wanted.

Another batch of plants ought to be selected from those that have been wintered in 7 or 8-inch pots, choosing the most vigorous plants, and these will supplement the autumn-potted plants. The remainder of such plants should be reserved until the general spring potting, when they may be shaken out and treated similarly to the suckers then started. Good fibrous loam with the turf reduced, or if used fresh it should be placed where it can be heated, so as to kill the grass and any larvæ it may contain, and torn up in a suitable compost, adding a quart



of soot to every bushel, and a similar quantity of some approved fertiliser. Turf that has been laid up must be had under cover to become dried. Drain the pots efficiently, but not excessively, dusting wood ashes or soot over the crocks so as to exclude worms. Keep the plants well down in the pots, ram the soil firmly about the balls, and leave sufficient space for copious supplies of water being given when necessary. For Queens 10-inch and 11 or 12-inch pots are suitable for those of stronger or more robust growth. A temperature of 60° to 65° will be sufficient for these plants, also for those potted last autumn, and 80° to 85° at the roots.

If sufficient plants are started for fruiting late, successional plants that have not been subjected to a high temperature may be advanced slowly, they, with autumn-potted suckers requiring careful watering, especially where the heat at the roots is supplied by fermenting materials. Plants about to be started into fruit must not have the heat of the fermenting beds at the base of the pots over 90° or 95° or the roots will be injured.

**Figs.**—*Earliest-forced Trees in Pots.*—The trees being now in full growth, the points of the shoots must be pinched out when they have made about five leaves. A temperature of 55° to 60° at night, 65° by day, advancing to 75° with sun, closing early and allowing an advance to 80° or 85°, is suitable for the present. When the weather is dull give a little extra heat in the early part of the day so as to admit of a little ventilation if only for an hour or two to give a change of atmosphere and induce sturdy growths. The bottom heat should be kept steady at 75°, introducing fresh sweetened leaves and litter as necessary. Syringe frequently to keep the trees free from red spider, and always sufficiently early in the afternoon to allow of the foliage becoming dry before night.

*Early Forced Trees in Borders.*—The trees started at the new year have commenced growth; the temperature should be slightly raised both at night and by day, 55° being suitable at night and 60° to 65° by day, with a rise of 5° to 10° from sun heat and a free circulation of air, as a drawn and weakly growth cannot afterwards be rectified, and it should be avoided by ventilation on all favourable occasions, seeking a sturdy short-jointed growth from the commencement. Syringe the trees twice a day on fine days, but when dull morning syringing is sufficient. The border will need copious supplies of liquid manure in a tepid state, or waterings through a mulch of partly decayed manure and in a lumpy state, so as to allow the roots to have the benefit of the air. Avoid, however, making the trees exuberant, as that is fatal to fruitfulness.

*Second Early-forced Border Trees.*—Where there are several Fig houses a second may now be started, to afford fruit at the end of June and early in July. If the trees have not had the old bare growths cut out so as to leave the successional wood with its terminals for furnishing the first crop, and been dressed with an insecticide, these matters must have immediate attention. The border should be brought into a thoroughly moist state by repeated watering if necessary with tepid water, or where the borders are small and the trees large tepid liquid manure may be supplied. Syringe the trees twice a day in bright weather, occasionally only when dull, but damp available surfaces so as to secure a genial atmosphere. A temperature of 50° at night and 55° by day artificially is sufficient to commence with, advancing to 65° from sun heat, with a free circulation of air.

**Peaches and Nectarines.**—*Earliest House.*—Syringe the trees in the morning and afternoon to keep red spider in check, but an occasional syringing suffices in dull weather, damping the paths and borders instead of the trees, so as to maintain a genial atmosphere. Applications of liquid manure will assist the fruit in swelling, especially that on trees long subjected to forcing. Vigorous trees will not require any stimulants, excessive vigour being unfavourable to the fruit safely passing the stoning process. Proceed with the thinning of the fruit, removing a few fruits only at a time, those badly placed first. Follow up disbudding, leaving a growth at the base of each bearing shoot and another at its extremity, or at a level with the fruit. The shoots retained for supporting the fruit should be stopped at the second or third leaf unless they are extensions, but the basal growths must be trained to take the place of those now bearing fruit. Shoots upon extensions may be left at 12 to 15 inches apart to form the bearing shoots of the future. The night temperature may range from 55° to 60°, and 60° to 65° artificially, with an advance to 70° or 75° from sun heat. It is better, however, to seek advancement from sun heat and in favourable weather than to push the trees in sunless. Ventilate on all favourable occasions, and avoid a close, stagnant atmosphere at all times; but cold draughts are very pernicious, and aridity favours insect pests.

*Houses Started at the New Year.*—Continue to impregnate the blossoms, and when the fruit is all set a gentle syringing in the morning and at closing time will assist in removing the remnants of the blossoms. Ventilate freely under favourable external conditions. Maintain a night temperature of 45° to 50°, or 5° more in mild weather, and 50° to 55° by day, with an advance to 65° or more from sun heat. See that the border is properly supplied with water. Where the fruit is too thickly set remove that on the under side of the branches.

*Houses Started at the Beginning of the Month.*—Syringe the trees occasionally until the blossoms show colour, when it must cease; but a genial condition of the atmosphere should be maintained by damping available surfaces in the morning and afternoon, avoiding a close stagnant atmosphere. If the blossoms are too thickly placed thin them by running the hand downward on the under side of the shoots, which

strengthens the remainder, enabling them to set the fruit better. Ventilate at 60° and fully at 65°, closing at 50°, and only use fire heat to maintain a temperature of 50° by day and 40° at night. Trees started at this time will ripen their fruit early in July.

*Later Houses.*—Admit air freely so as to retard the blossoming, especially in the case of unheated houses, which are liable to suffer from spring frosts. See that the borders have water if needed. If the roof lights have been removed they need not be replaced until the buds are advanced in swelling, they are quite safe for another month or more.

**Melons.**—To secure a quick and sturdy growth there must be plenty of top and bottom heat, ventilating early on all favourable occasions, closing early with a genial atmospheric moisture on bright days. This will induce a consolidated growth, and that is essential to well developed blossoms, a good set, free swelling, and heavy fruit. Exercise great care in ventilating, a current of cold air crippling the growths, a piece of hexagon netting placed over the ventilators when the days are cold is useful. The temperature should be maintained at 60° to 65° at night or 70° when mild, 70° to 75° by day, and 80° to 90° with sun heat, closing early in the afternoon with plenty of atmospheric moisture on bright days, and if the temperature rise to 95° or 100° it will be more advantageous than otherwise. Sow as occasion requires for successional crops, always taking care to have more plants than are likely to be required.

## THE BEE-KEEPER.

### APIARIAN NOTES.

THE bee-keeper should not lose an opportunity in making sure that all appliances are in readiness for every emergency throughout the season. A little forethought will pave the way so as to steer clear of disorder and difficulties during the busy part of the year. By the time this appears in print the bees will have begun working on flowers or on the artificial product, pease meal. In every case where a shortness of stores is suspected feed liberally. During the latter half of January there were some mild days and nights, which were favourable for feeding bees. Where solid floors are in use change them frequently, so that damp during easterly March winds may not cause the bees to contract the cluster, and allow much brood to perish or eggs to be eaten out.

For upwards of thirty years the *Journal of Horticulture* has taught the method, and the advantage of having early and strong stocks. This is accomplished by preventing what your readers know as "bees going back," either by keeping the stocks well provisioned without feeding till June, or by careful and timely feeding those short of stores. It is therefore gratifying to see by the "Bee-keeper's Record" that the readers of that paper are profiting by our advice, inasmuch as the instructions given so often in these pages have been the means of producing a large yield of honey.

I may just remind your bee-keeping readers that hives with extra stores will, after breeding has commenced, not relax it so long as there are from 8 to 15 lbs. of honey in the hive up till June. But even with that amount of honey at that date, if the weather is inauspicious the bees will eat and draw out much brood and eggs. A hive with little or no stores may be kept breeding, but it is only by fits and starts, and but a small per-centage of the eggs deposited are brought forth. If neglected to be fed for a short time thousands of eggs are destroyed. Stimulative feeding with short stores is time and money thrown away.

### COLOURED WAX.

I observe what "A Hallamshire Bee-keeper" says anent coloured combs on page 40. I have frequently mentioned the colouring of combs from flowers profuse in pollen, but never saw a case where the seals could be said to be coloured because of honey being gathered from certain flowers. The scales of wax when secreted by the bees are of one uniform whiteness, but not of texture or density. Bees have a tendency to imitate the colour of their combs to their surroundings within the hive, and that is one of the reasons why super combs are coloured when the centre of the crown of the hive is open, and the opposite when it is closed, especially when the combs are a year or more old.

As propolis is insoluble in water, I cannot think wax is coloured by it, but by pollen, which, if exposed to the sun, becomes white. I was once an eye-witness to a remarkable change in yellow wax becoming pure white by melting it a second time in a different water, probably caught from a new roof of corrugated iron.

I observe also "W. D." remarks on page 62, regarding Fennel being a good yielder of pollen, the latter being mostly used for the larvæ and for the seals of the brood cells, not for making them.—A LANARKSHIRE BEE-KEEPER.



## TRADE CATALOGUES RECEIVED.

J. E. Barnes, The "Great Eastern" Seed Stores, Norwich.—*Vegetable and Flower Seeds, &c.*

Richard Dean, Ranelagh Road, Ealing, W.—*Primroses, Polyanthus, Hardy Plants, Seeds, Potatoes, &c.*

Dr. G. Dieck, Zöschen, Merseburg.—*Fruit, Trees, Shrubs, &c.*

Andrew Irvine, Tighnabruach, N.B.—*Pansies, Violas, Carnations, Roses, &c.*

J. Lambert & Sons, Trier.—*Vegetable and Flower Seeds.*

Pitcher & Manda, United States Nurseries, Short Hills, New Jersey, U.S.A.—*New and Rare Seeds, Plants, and Bulbs.*

Vilmorin, Andrieux & Co., Paris.—*General Seed Catalogue.*

James Yates, Stockport.—*Vegetable and Flower Seeds.*



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Manures for Roots (A. B.).**—A mixture of two parts mineral superphosphate, two parts steamed bone flour, and one part kainit applied at the rate of about 3 ozs. to the square yard, or 6 lbs. per rod, not deeply dug, but lightly pointed in now, would be good for roots after Brassicas, and after the plants appear top-dressings of soot would be very beneficial, as would nitrate of soda sprinkled on the soil only, not on the leaves of young Radishes. If you can procure guaranteed bone superphosphate the bone flour may be dispensed with. If you use nitrate of soda too freely and mineral support too sparsely you will soon weaken your land.

**Fungus Spoiling Mushrooms.**—Your beds appear to be infested with the most offensive and destructive fungus *Xylaria vaporaria*, referred to in "Mushrooms for the Million," page 94, sixth edition. After the strong and varied measures you have resorted to we fear there is small hope of anything banishing the pest short of thorough and complete disinfection extending over a considerable time. We are pleased to learn of your success in other than the infested building through following the instructions in the work named, and we expect if you abandon the old pest house you will not often be without Mushrooms, but will manage to grow them somewhere or other. All the same we are sorry for the infestation.

**Vines in Pots (Vine).**—We presume, though you do not say so, that you desire to fruit the Vines this year. If the wood you send is a fair sample, the Vines are too weak for affording a satisfactory crop, though they may afford small bunches. They could be supported in 10-inch pots with the aid of top-dressings and liquid manure, and would derive benefit if the roots could extend into a bed of mild fermenting materials such as leaves. We have seen good results accrue from shifting such Vines into larger pots when the work and subsequent watering have been carefully done. The time for shifting is when young growths push to the extent of an inch or two, only liberating the roots slightly as if repotting a Chrysanthemum. Nothing that you can do now can influence the production of bunches; but the berries of those produced may be enlarged by free-root action and adequate supplies of appropriate food.

**Gardenias (J. E.).**—It is just possible that the plants you cut back will not bloom this season. You kept them growing too late to ripen their wood sufficiently to set flower buds. Take out the points of the shoots and push the plants into fresh growth as early in the season as you can. They will then complete and ripen their wood early. This is necessary if they are to flower during winter. If the plants have a tendency to grow too long in summer, place them in a cool house fully exposed to the sun. They will then soon stop growth, and when returned to heat again will form flower buds. We have always been most successful by striking a number of cuttings in July or August in thumb pots, when well rooted placing them into 2½ or 3-inch pots for the winter. The shoots are pinched until they are placed in 5-inch pots, when they are allowed to extend until they complete their growth. A slight rest is given in a cooler house before they are introduced into heat. *G. Stanleyana* is very shy in flowering. You had better grow it as it is until it shows bloom. It requires to be well ripened. The flowers are single, white, very fragrant, and possess a very long tube.

**Orchids Unsatisfactory (T. O.).**—The plants appear to be in a very unhealthy state. The root-action is probably defective, and it is certain they cannot receive the requisite nourishment with the pots standing on either dry ashes or dry boards. If the medium in which the plants are, we will not say growing, but established, is sour, as it may be, it should be removed, and the roots washed and trimmed if needed, then placed in sweet material in small pots two-thirds filled with drainage, and the pots stood on a damp (not too wet) base. The *Dendrobium* growths were probably not well supported last year nor ripened. They cannot have too much sun in the autumn, and then need very little water. The temperature is suitable for most of the *Odontoglossums*. You should have explained the condition of the plants more precisely, also stated their size as well as the size of the pots, also the nature of the compost and roots, and when they were last repotted.

**Upright Cordon Pear Trees for House Gable (A Market Gardener).**—The following with liberal treatment would afford fine fruit:—Jargonelle, double grafted, August; Triomphe de Vienne, double grafted, September; Magrate, Quince, October and November; Doyenné du Comice, Quince, November and December; Beurré d'Anjou, Quince, December and January. Pitmaston Duchess produces grand fruit in such positions, and it is a pity to see cottage walls naked or occupied with worthless varieties of fruit trees, instead of the larger and better paying varieties. Pitmaston Duchess does well on the Quince, but better on the Pear stock. The Apricot would probably fruit better if it were root-pruned, and it should be attended to without delay, or deferred until the early autumn.

**Water-edge Plants (J. H. E. B. H.).**—The margins of artificial ponds or lakes are often bare, and not unfrequently monotonous from the natural or common-place plants that are employed to fringe them. If a greater variety of plants of different heights, varied habit, and diverse flowers were employed and disposed in irregular and bold groups, some near and some at a distance from the water, the distance between them being varied yet harmonious, good effects would be attained. The *Epilobiums* are fine; *E. angustifolius* thrives in rich moist soil, and grows 5 or 6 feet high, and has showy purple-red flowers. The Purple Loosestrife (*Lythrum Salicaria*) is a good water-edge plant; and *Spiræa ulmaria* (our Meadow Sweet) is excellent. The Reeds are indispensable. The common Reed (*Arundo Phragmites*), which abounds by river sides; Purple Small Reed (*Calamagrostis Epegoios*), attains to about half the height of the common Reed, has fine leaves and handsome plumes; and the Reed Grass (*Digraphis arundinacea*), with broad leaves and handsome plumes, contrasts well with the preceding. The last two grow 3 to 4 feet high, and the first sometimes 10 feet. Pampas Grass (*Gyncrium argenteum*) and the New Zealand Reed Grass (*Arundo conspicua*) succeed admirably, provided there is not an excess of water about the roots—that is, they must be planted high, and when dotted here and there are singularly effective. In the wetter places Lyme Grass (*Elymus giganteus*) and *E. canadensis* are suitable, and succeed where choicer plants do not thrive. Carexes do well in boggy places, none being better than our native species, *C. paniculata* and *C. pendula*. There is a variegated form of *C. acuta*, also of *C. riparia*, both doing well, even in water; and the Galingale (*Cyperus longus*) does well in shallow water. A Bamboo in conspicuous places add immensely to the effect. *Arundinaria falcata* and *Bambusa Metake*, with *Phyllostachys bambusoides*, are amongst the hardiest and best, and should be planted clear of the water. Club Rushes thrive in wet soil; *Scirpus triquetra* and *S. Holochæus* are both good. The Great Spearwort (*Ranunculus Lingua*) has bold foliage, showy yellow flowers an inch across, and should be planted close to the water edge. Sweet Flag (*Acorus Calamus*) is very desirable for its noble and aromatic leaves. The Water Plantain (*Alisma Plantago*) is bold and striking when planted on the margin of water; and nobler still is *Caladium virgicum*, planted in about 6 inches depth of water. *Caltha monstrosa* forms a mass of gold in early summer, and should be planted at the water edge. These, with those named in our former reply, judiciously employed would make a good assortment.

**Plants for Narrow Borders (H.).**—It is difficult to have some flowers almost all the year round from outdoor plants, but the following will afford a good supply over most of the year, as they bloom at different times:—*Aconitum pyrenaicum* 2, *Allium pedemontanum* 2, *Anemone appennina* 1, *Anthericum liliastrum* 3, *Aquilegia glandulosa* 2, *Armeria plantaginea rosea* 3, *Aster Amellus majus* 3, *A. bessarabicus* 3, *A. peregrinus* 3, *Aubrietia Campbelliæ* 1, *A. græca* 1, *Betonica grandiflora* 3, *Calochortus luteus oculata* 2, *Campanula dahurica* 3, *C. glomerata alba* 3, *Convallaria majus* 2, *Corydalis lutea* 2, *C. eximia* 2, *Cyclamen hederæfolium* 1, *Cyclobothra pulchella* 2, *Delphinium nudicaule* 3, *Dianthus fragrans* 2, *D. neglectus* 2, *Doronicum Clusi* 3, *Dodocatheon integrifolium* 1, *Erodium Manescavi* 3, *Erythronium dens-canis* 1, *Fritillaria meleagris* 3, *Fuchsia pumila* 3, *Gentiana acaulis* 1, *G. verna* 1, *Geranium Endressi* 3, *Helleborus atrorubens* 2, *H. niger angustifolius* 2, *Hepatica triloba* vars. 1, *Hypericum calycinum* 2, *Iberis correaefolia* 2, *Iris nudicaulis* 2, *I. caucasica* 2, *I. susiana* 2, *Leucojum vernum* 2, *Lilium Harrisii* 3, *L. tenuifolium* 3, *Lotus corniculatus plenus* 1, *Lychnis dioica rubra plena* 2, *L. diurna plena* 2, *L. vespertina plena* 2, *Muscari botryoides* 1, *Myosotis dissitiflora grandiflora* 1, *Narcissus bulbocodium album* 1, *N. Emperor, Empress, Horsfieldi* 2, *N. incomparabilis* 2, *N. nanus* 1, *N. obvallaris* 2, *N. poeticus ornatus* and *N. poeticus plenus* 2, *N. pumilus plenus* 1, *Oenothera Youngi* 3, *Omphalodes verna* 1, *Onosma taurica* 2, *Orobis vernus* 2, *Oxalis floribunda* 1, *Papaver nudicaule* 3, *Phlox subulata* and *alba* 1, *P. verna* 1, *Polemo-*



nium Richardi 3, Ranunculus aconitifolius plenus 2, Rudbeckia Newmaniana 3, Saponaria caucasica plena 2, Saxifragia Camposi 1, S. or Megasia ciliata, M. cordifolia, M. Stracheyi, all 2, Scabiosa caucasica 3, Scilla sibirica 1, S. bifolia 1, Sedum spectabile 2, Spiraea japonica 2, S. ulmaria plena 3, Trollius europæus 2, Tulipa Greigi 2, Veronica amethystina 3, V. prostrata 1, Viola suavis 1, and Zauschneria californica 3. In addition to the above you can have Alpine Auriculas 1, Pinks, both florists and mule 2, summer-flowering Chrysanthemums 3, double Daisies 1, Delphinium belladonna and the Globe 3, Iris germanica var. 2, Pansies and Violas 1, Violets in variety 1, Pæonies arietina decora and vars. paradoxa and fimbriata 3, Phloxes La Cour and Purple King 3, also Liberte and Mdle. Cuppenham 3, Potentillas 2, Primroses Harbinger, double crimson, lilac, purple; Giantess, white, yellow, rose, and sanguinea, Lady Isabel 1, also Polyanthus cærulea, Black Prince, Cheshire Favourite, and Zulu King 1; double and single-flowered Pyrethrums 3, which are invaluable for cutting; the indispensable Carnations 2, and Double Rockets 3. Then there are Snowdrops, Hyacinths and Tulips, with Anemone coronaria vars. 1, so that you would have a fair chance of securing flowers nearly all the year round. The figures refer to the rows—1, first row; 2, second row; 3, third row; but the border ought to be 4 feet wide, so as to give the plants a chance, or if you must adhere to 2 feet only use 1 and 2.

**Roses up Wellingtonias (Norfolk).**—The Ivy roots will probably have exhausted the soil, and it will be necessary to remove the largest, at least, of the Ivy roots and apply a good dressing of manure and mix it with the soil, so as to give the Rose tree a chance. If that cannot be done without injury to the Wellingtonia roots, it will be necessary to supply a good dressing of rich compost around the trees, say a yard wide all round the trees, and deep enough to plant the Roses in. Without some preparation of this nature it is probable the Roses would not succeed—possibly not then, especially if the Wellingtonia roots dry the soil considerably. As the Wellingtonias are bare of branches, it is possible that the Roses may succeed, and the following may meet your requirements:—Waltham Climber No. 1 is a good bright red Rose, and flowers till late in the season; Catherine Bell, deep rose, free flowering, and very sweet; Climbing Edward Morren, cherry-red; and Princess Louise, dark carmine shading to pink, or Setina, is a splendid climbing Rose, bearing a profusion of beautiful silvery pink flowers. Your other questions will have attention.

**Attar of Roses—Rose Water (G. P.).**—The attar is made from Damask Roses, Cabbage Roses, and Musk Roses, the first named in India chiefly, the others in Persia and Turkey. The attar of Roses is the oil of the Rose, which is procured by distillation, and varies in quality according to the quarter from whence it comes. From Dr. Jackson's paper in the "Journal of the Asiatic Society," we gather the following account of the manner in which attar of Roses is obtained:—"Round the station of Ghazeepore there are about 150 acres of ground laid out, in small detached fields, as Rose gardens, most carefully protected on all sides by high mud walls and Prickly Pear fences, to keep out the cattle. Every beegah, or half acre, contains 1000 Roses, and if the season is good this beegah should yield one lac of Roses. The Roses come into flower at the beginning of March, and continue so through April. In the morning early the flowers are plucked by numbers of men, women, and children, and are conveyed in large bags for distillation. The native apparatus for distilling is of the simplest description; it consists of a large copper or iron boiler well tinued, capable of holding from 8 to 12 gallons, having a large body with rather a narrow neck, and a mouth about 8 inches in diameter; on the top of this is fixed the head of the still, which is nothing more than an old 'dekchee,' or cooking vessel, with a hole in the centre to receive the tube or worm. The tube is composed of two pieces of bamboo fastened at an acute angle, and it is covered the whole length with a strong binding of corded string, over which is a luting of earth, to prevent the vapour from escaping. The small end, about 2 feet long, is fixed into the hole in the centre of the head, where it is well luted with flour and water. The lower arm or end of the tube is carried down into a long-necked vessel or receiver, called a 'bhubka'; this is placed in a 'handee' of water, which as it gets hot is changed. The head of the still is luted on to the body, and the long arm of the tube in the 'bhubka' is also well provided with a cushion of cloth, so as to keep in all vapour. The boiler is let into an earthen furnace, and the whole is ready for operation. To procure the otto, or attar, the Roses are put into the still, and the water passes over gradually, as in the Rose-water process. After the whole has come over the Rose water is placed in a large metal basin, which is covered with wetted muslin tied over, to prevent insects or dust getting into it. This vessel is let about 2 feet into the ground, which has been previously wetted with water, and it is allowed to remain quiet during the whole night. The attar is always made at the beginning of the season, when the nights are cool. In the morning early the little film of attar, which is formed upon the surface of the Rose water during the night, is removed by means of a feather, and it is then carefully placed in a small phial, and day after day, as the collection is made, it is placed for a short period in the sun, and after a sufficient quantity is procured, it is poured off clear, and of the colour of amber, into small phials. From one lac of Roses it is generally calculated that 180 grains, or one tolah, of attar can be procured. More than this can be obtained if the Roses are of full size and the nights cold to allow of the congelation." Attar of Roses is said to be obtained in Macedonia by crushing the petals in mills, expressing the fluid part, filtering it, and then exposing it to the sun in small glass vessels. The oil gradually collects on the surface of the liquid, and is removed. There is also a manufactory of the article

at Florence which is conducted by a convent of friars. *Rose water* is obtained by distilling 1 gallon from 2 lbs. of Roses and 2 gallons of water. When properly prepared it has the delightful perfume of the Rose in great perfection; but it should never have alcohol added to it, as it is said to render it sour, by promoting the acetous fermentation.

**Names of Fruits.**—*Notice.*—Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*Major Warfield*).—Good specimens of Golden Winter Pearmain, popularly but incorrectly known as King of the Pippins. (*J. F. D.*).—The Apple possesses all the characteristics of Bramley's Seedling, but we have not seen this variety so highly coloured as in the specimen you send. (*Alfred Brook*).—We suspect the Apple you send is of local origin, and never had a generally recognised name.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. T.*).—*Lycaste xytriophora*. (*H. F.*).—1, *Gleichenia circinata*; 2, *Acacia cultriformis*; 3, *A. melanoxylon*; 4, *Cocculus lauroleia*; 5, *Strobilanthes isophyllus*; 6, *Phormium tenax variegata*. (*Narcissus, G. W. R.*).—*Aurantius plenus* (Butter and Eggs), a variety of *N. inconparabilis plenus*.

#### COVENT GARDEN MARKET.—FEBRUARY 1ST.

Business somewhat improving, with prices harder all round.

##### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.		
Apples, half sieve .. ..	1	0	to	3	6	Lemons, case .. ..	10	0	to 15	0	
„ Nova Scotia, per barrel .. ..	12	0		17	0	Oranges, per 100 .. ..	4	0		9	0
Cobbs, Kent, per 100 lbs.	0	0		125	0	Peaches, per dozen .. ..	0	0		0	0
Grapes, per lb. .. ..	0	6		3	0	St. Michael Pines, each ..	3	0		6	0

##### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.			
Beans, Kidney, per lb.	..	0	6	to	0	0	Mustard and Cress, punnet	0	2	to	0	0
Beet, Red, dozen .. ..	..	1	0	0	0	0	Onions, bunch .. ..	..	0	3	0	5
Carrots, bunch .. ..	..	0	4	0	0	0	Parsley, dozen bunches ..	..	2	0	3	0
Cauliflowers, dozen .. ..	..	2	0	3	0	0	Parsnips, dozen .. ..	..	1	0	0	0
Celery, bundle .. ..	..	1	0	1	3	0	Potatoes, per cwt. .. ..	..	2	0	5	0
Coleworts, dozen bunches		2	0	4	0	0	Salsafy, bundle .. ..	..	1	0	1	6
Cucumbers, dozen .. ..	..	8	0	12	0	0	Scorzonera, bundle .. ..	..	1	6	0	0
Endive, dozen .. ..	..	1	3	1	6	0	Seakale, per basket .. ..	..	1	6	1	9
Herbs, bunch .. ..	..	0	3	0	0	0	Shallots, per lb. .. ..	..	0	3	0	0
Leeks, bunch .. ..	..	0	2	0	0	0	Spinach, bushel .. ..	..	3	0	3	6
Lettuce, dozen .. ..	..	0	9	1	0	0	Tomatoes, per lb. .. ..	..	0	2	0	6
Mushrooms, punnet .. ..	..	0	9	1	0	0	Turnips, bunch .. ..	..	0	3	0	4

##### PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Ficus elastica, each .. ..	1	6	to	10	0
Aspidistra, per dozen ..	18	0		36	0	Foliage plants var., each..	2	0		10	0
Aspidistra, specimen plant	5	0		10	6	Genista, per dozen .. ..	10	0		15	0
Azalea, per dozen .. ..	24	0		42	0	Hyacinths, dozen pots ..	8	0		12	0
Chrysanthemums, per doz.	6	0		9	0	Lily of the Valley, dozen					
Cineraria, per dozen ..	8	0		12	0	pots .. ..	12	0		18	0
Cupressus, large plants, each	2	0		5	0	Lycopodiums, per dozen ..	3	0		4	0
Cyclamen, dozen pots ..	9	0		18	0	Marguerite Daisy, dozen ..	6	0		12	0
Dracæna terminalis, dozen	18	0		42	0	Myrtles, dozen .. ..	6	0		9	0
„ viridis, dozen ..	9	0		24	0	Palms, in var., each .. ..	1	0		15	0
Euonymus, var., dozen ..	6	0		18	0	„ (specimens) .. ..	21	0		63	0
Evergreens, in var., dozen	6	0		24	0	Primula, single, doz. pots	4	0		6	0
Ferns, in variety, dozen ..	4	0		18	0	Solanums per dozen .. ..	9	0		12	0
Ferns (small) per hundred	6	0		8	6	Tulips, dozen pots .. ..	6	0		9	0

#### AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arum Lilies, 12 blooms ..	3	0	to	6	0	Narciss, var., French, dozen bunches .. ..	3	0	to	6	0
Azalea, dozen sprays.. ..	0	6	1	0	Orchids, per dozen blooms	3	0	12	6		
Bouvardias, bunch .. ..	0	6	1	0	Pelargoniums, 12 bunches	8	0	12	0		
Camellias, doz. blooms ..	1	6	4	0	Pelargoniums, scarlet, doz. bunches .. ..	6	0	9	0		
Carnations, 12 blooms ..	2	0	3	0	Poinsettia, per dozen ..	3	0	6	0		
Chrysanthemums, dozen bunches .. ..	4	0	12	0	Primroses, dozen bunches	2	0	3	0		
Daffodils, double, dozen bunches .. ..	6	0	12	0	Primula (double) 12 sprays	0	9	1	0		
Daffodils, single, dozen bunches .. ..	9	0	18	0	Roses (French), per doz. ..	2	0	6	0		
Eucharis, dozen .. ..	4	0	6	0	„ boxes, 100 .. ..	5	0	8	0		
Gardenias, per dozen ..	12	0	24	0	„ (indoor), dozen ..	2	0	4	0		
Hyacinth Roman, 12 sprays	0	6	1	0	„ Red, per doz. blooms..	6	0	12	0		
Lilac, white, French, per bunch .. ..	4	6	6	0	„ Tea, white, dozen ..	1	6	3	0		
Lilium longiflorum 12 blooms .. ..	9	0	12	0	„ Yellow, dozen .. ..	4	0	6	0		
Lily of the Valley, dozen sprays .. ..	0	6	1	6	Snowdrops, dozen bunches	1	0	2	6		
Maidenhair Fern, dozen bunches .. ..	6	0	9	0	Tuberose, 12 blooms.. ..	1	0	1	6		
Marguerites, 12 bunches ..	3	0	6	0	Tulips, dozen blooms ..	0	6	2	0		
Mignonette, 12 bunches ..	3	0	6	0	Violets, Parme, French, per bunch .. ..	6	0	7	6		
Mimosa, French, per bunch	1	0	1	6	Violets, Czar, French, per bunch .. ..	3	6	5	0		
					Violets, Victoria, French, dozen bunches .. ..	3	0	6	0		





## BASIC SLAG.

THIS useful addition to our phosphatic manures came prominently into use eleven years ago. It is known under the different names of basic slag, basic cinder, basic phosphate, and Thomas' phosphate powder, the last designation pointing to its derivation from the Thomas-Gilchrist process. Its low price and richness in phosphates has led to its use indiscriminately everywhere. For soils deficient in lime it is excellent; it may also be used advantageously on all soils, preference for a manure being influenced very much by its price. No doubt for soils containing plenty of lime ordinary mineral superphosphate, with an addition of pure dissolved bones, is preferable; but when the price asked is higher than that of basic slag, then slag is ordered. So it has come to be used very generally, and equally of course it has become adulterated so badly that in the new number of the Royal Agricultural Society's Journal attention is called to the necessity for analysis. In a case which recently occurred a guarantee of from 37 to 42 per cent. of phosphate of lime had been given, the slag to be of from 85 to 90 per cent. "fineness." On analysis the sample was found to contain only 31½ per cent. of phosphate of lime, and to be only 64 per cent. "fineness." Upon the purchaser complaining the agent through whom it was bought said, as the order was for so small a quantity, perhaps they did not think it would be likely to be tested. This was so, because another lot, ordered subsequently, came up to the guaranteed description.

The test for fineness obtained by thorough grinding is that 85 per cent. passes a sieve containing 10,000 holes to the square inch; and for quality that samples taken from the bulk correspond sufficiently near to the following full analysis:—

Lime	...	...	...	...	...	45.04
Magnesia	...	...	...	...	...	6.20
Ferrous oxide	...	...	...	...	...	17.56
Manganese oxide	...	...	...	...	...	3.17
Alumina	...	...	...	...	...	1.72
Phosphoric acid	...	...	...	...	...	18.11
Sulphuric acid	...	...	...	...	...	0.41
Sulphur	{	...	...	...	...	0.30
Calcium		...	...	...	...	
Vanadium oxide	...	...	...	...	...	0.24
Silica	...	...	...	...	...	6.90

99.65

We commend this analysis to the attention of fruit farmers who may have become puzzled over formulæ of chemical manures in which certain quantities of iron and magnesia are said to be necessary in manure mixtures for fruit culture. They will then see that a liberal addition of basic slag gives them both these constituents, as well as the far more valuable phosphates of lime. Though it is certain that enough of iron and magnesia are almost always present in the soil as to render the matter of secondary importance in manure mixtures, yet to avoid vexation and uncertainty use basic slag; a little extra iron in the soil does no harm provided it has ample stores of nitrogen, potash, phosphoric acid, and lime, and it is certain that iron imparts brilliancy of colour to fruit. It is where soil has become permeated with oxide of iron by the ochrous deposit resultant from a chalybeate spring, that fruit trees canker. But even such soil may be rendered fairly suitable for fruit culture by the application of heavy dressings of lime.

For general use in agriculture basic slag ought certainly to hold a leading place; for permanent pasture especially it appears to be valuable. It should be applied early, preferably in the autumn, because it is more slowly soluble than some other phosphates; and it has this advantage, that while the growth of the year will only take up sufficient phosphoric acid for its requirements, soil retains the residue for the next or several

seasons of growth. A very common fault is the use of this and other chemical manures with too heavy a hand, from the popular idea that in manure richness and bulk are inseparable. No easy matter is it to enlighten the blind faith which regards a ton of farmyard manure as available plant food for the crop for which it is used, but it is possible to show how the action of basic slag, if slow, is persistent, till the residue in the soil is exhausted. The condition of the pasture is always a safe indication of its requirements, and it is not difficult to see when a second dressing of the slag is becoming necessary.

## WORK ON THE HOME FARM.

Advantage was taken of hard frost to cart manure from cattle and cow yards to heaps in the field intended for Mangolds. As each heap was finished it was quite covered with soil, and it will be so left till it is wanted next April; then as early in the month as possible it will be carted on to the land and spread along the rows just thickly enough to afford plenty of moisture for the plant in the earlier stages of growth. Though it contains some plant food there is not enough for the requirements of the crop, some phosphatic chemical manure being added to it before it is covered. After the crop is in full growth it has one or two heavy surface dressings of nitrate of soda, which, being worked into the surface by the hoes, dissolves quickly, so that the whole of the soil about the roots is stored with ample supplies of this rich plant food. The land intended for Mangolds was thrown up into ridges in the autumn by the double breasted ploughs, so that in April preparation for sowing consists in placing manure in the furrows and splitting the ridges, the sowing then follows at once. Here, again, we always find great benefit from thorough autumn tillage, both in having less work to do at sowing time and in the friable condition of the soil.

Supplies of chemical manures for spring work should now be procured from a reliable source, so as to be ready for dressing permanent pasture by the end of February. Where basic slag alone is to be used for the pasture, buy only under analysis, and apply at once. As it is best used in autumn, we should now mix with it about 1½ cwt. nitrate of soda per acre to promote prompt free growth this season. From 4 to 8 cwt. of the slag may be used per acre, according to the condition of the pasture. We may then feel assured that the residue of phosphoric acid in the soil next autumn will keep the herbage fresh and green during the winter, and then a moderate dressing of nitrate of soda alone will suffice in the following spring. All permanent pasture drainage is being pushed on, so as to afford time for the soil to settle down, the sods to be replaced, and pressed down by a heavy roller before spring. A few hours' rain or deep fall of snow causes the soil in new drains to settle down quickly; the sods can then be replaced at once, but if laid upon the soil when the draining is done they may fall over or be knocked about by horses or cattle.

## OUR LETTER BOX.

**Farm Repairs (J. H. E. B. H.).**—The matters concerning which you require information will be treated at length in our home farm articles, as they are of general use. You specify nothing uncommon in such work, but if subsequently to the publication of our notes you have anything for which you require special advice then write to us again.

**Small Farms - Past and Present Prices (J. J. S.).**—The information you wish can only be obtained after considerable research, if then, and therefore cannot be published this week. You have taken your time to ask the questions, and we must take ours to answer them. That is fair, is it not?

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

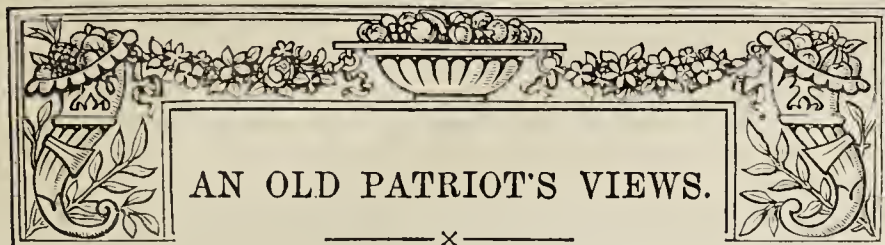
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1893.  January.		Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday	.. 22	30.324	42.4	41.2	N.W.	33.8	45.7	36.2	48.0	31.8	0.010
Monday	.. 23	30.080	44.2	42.0	N.W.	34.6	50.4	42.1	69.1	36.4	—
Tuesday	.. 24	30.155	45.2	43.9	W.	36.5	48.0	44.1	53.1	39.0	—
Wednesday	25	30.211	39.1	38.9	W.	37.9	44.2	38.7	50.9	33.1	0.010
Thursday	.. 26	29.934	43.9	42.6	S.	38.0	45.9	36.8	51.9	35.4	0.224
Friday	.. 27	30.049	33.9	33.7	N.	38.2	41.4	31.2	58.8	17.1	—
Saturday	.. 28	29.844	4.1	38.3	S.	37.1	47.1	32.4	69.0	27.2	0.058
		30.085	41.3	40.1		36.6	46.1	37.4	57.3	32.9	0.302

## REMARKS.

22nd.—Overcast throughout, with slight showers between noon and 3 P.M.  
 23rd.—Overcast early; sunny from 11 A.M. to noon; occasional drizzle between 1 and 3 P.M., and fair night.  
 24th.—Overcast early, fine during the middle of the day, but not sunny.  
 25th.—Fair, but sunless.  
 26th.—Overcast, and at times damp in the morning; showery from 2 to 3 P.M., and steady rain from 6 P.M. to 11 P.M.  
 27th.—Bright sunshine early, and about 2 P.M., but generally foggy, and dense fog from noon to 1 P.M. and 3 P.M. to about 8 P.M.  
 28th.—Fine, with occasional sunshine in morning, bright sunshine from noon to 3 P.M.  
 A mild week, temperature about that which on the average may be expected at the end of March.—G. J. SYMONS.





WE have been somewhat interested in a communication that we feel constrained to "bring to the front" from one of the old juveniles of the horticultural world—Mr. Robert Fenn of Sulhamstead. A warm-hearted example of a son of the spade and the pen is the writer of the notes in question. A curious mixture of pessimism and optimism appears to run through them, backed by a barrier of as fine crusted old Conservatism in social life and habits as the most loudly proclaiming "lover of his country" could wish to see. Yet, paradoxical as it may seem, this "*fin du siècle* Englishman," as he styles himself, claims to be in advance of all our modern reformers in having done years ago what they are trying to do now by lectures and cognate schemes, some of them, he would have us believe, working wrong end upwards. Perhaps he may be right, for there appears to be a tendency of desire on the part of at least some ardent aspirants to reach the top of the ladder in some more quick and easy way than in steadily climbing from the bottom. There is hidden wisdom in those references, and both lecturers and workers may do worse than ponder over them. They mean "begin at the bottom and work steadily 'upwards and onwards,' as I have done through years of persevering endeavour, and win by your labour as I have done a 'holding' that practically gives me all I need (except sugar) and makes me independent of the foreigner and all his works and wares."

A happy position truly, a well won arcadian home ; but there is a tinge of sorrow in his letter. It seems to suggest as if the writer had outlived his time and his friends, and that he feels a little deserted. He has, thanks to a well-spent healthy outdoor active life in work he loves, outlived many ; but many remain, and not a few of these would be glad if they could more frequently share his boundless hospitality and cheery companionship, even for a few hours during Potato time. We know that this is so ; but some of the ancients move slowly. They can no longer fly hither and thither in frisk Fennian fashion, as they would like. Let, then, this, the friskiest of them all, be thankful that he is not as those other men are ; but rest in the assurance that they rejoice in his strength and appreciate his work. But he has admirers whom he has not seen. Said one the other day, "If there is one man above all others I should like to see at home, he is Robert Fenn—the great herbaceous perennial I call him, who seems to die down for a while, then spring up as strong as ever." "Well," was the response, "if we are all well next July you *shall* see him." And so the compact was made ; and when our old friend sees his new one there will be an interchange of broad smiles and hearty greetings, to be followed by "something in the Journal" from a master in the art of husbandry and vivid description. And now, Mr. Fenn, be easy—at least, as easy as you can, and wonder who your new friend can be ; but in the meantime please step forward, and tell your mixed story to the world.

I have several things to say, but first I feel it has become due for me to write my experience of last season in respect to the anti-blight powder and Potatoes. I did not experiment with it so extensively as in 1891, and the crops that were operated upon I limited to garden culture, therefore I would refer to issues of the *Journal of Horticulture* for September 22nd, and September 17th,

1891, where my doings are commented upon by visiting friends. I consider myself as having been "sent to Coventry" in 1892, I was left so severely alone. Local people are very difficult to convince in the cases of anything new ; for instance, in a conversation with an estate agent, I happened to mention my then proceedings with the anti-blight powder, and I invited him to come and see the proofs of its action upon my Potatoes. He answered me, with a hauteur sufficient for an emperor, that "nobody could ever make him believe that any squirtings with mixtures or puffings with powders would prevent the Potato disease." Probably this gentleman comes in contact with farmers or other cultivators of the soil on most days, and should their conversations take a turn like mine, of course a jump at conclusions would be the same. "A right one, too," you may think, for farmers, who usually cultivate those large coarse varieties chiefly for saleable market purposes, caring nothing for quality. These thick-skinned giants can take no disease worth mentioning, and the game would not be worth the candle to recommend the anti-blights for their field culture. However, it is not for them that I write. Magnum Bonum is still the most gentlemanly of their type, but, begging its pardon, I do not consider it a suitable garden variety.

It may be asked, "Then what do constitute a gentleman's or garden Potato?" I will answer, "Fenn's seedlings," and I think I write so for the first time. But it is becoming the end of the century to blow one's own trumpet. Then let the sound go forth. Sutton's Ringleader, Early Border, Lady Truscott, Rector of Woodstock, Woodstock Kidney, and Fifty-fold are six garden Potatoes (relieving the ground for second cropping) of the highest merit from any kind of soil. All of them excepting the first (that is a cross with my English pedigree stock and the true American Snowflake) are studied results from best English kinds, not to be procured now for love or money ; varieties crossed and re-crossed, and the blood of them, so to speak, handed down without a haphazard break through a long series of years. The above are quite enough for any parlour purposes, and there is none that can be grown having higher table qualities, or that contains equal sustaining powers ; and now, thanks to Tait & Buchanan's Anti-Potato Blight Powder, I can keep them perfectly free from disease if constantly dusted, so as to allow no loopholes upon the foliage, for the fatal spores to take possession. I had the above varieties along with other of my newer seedlings grown purposely in the garden for testing the powder. Not a leaf took the spot, nor did a single tuber become diseased ; and what is more, I had the store tubers overhauled purposely last week to give the latest tone for this call, and to find an entire bill of health. "Not an unsound Potato amongst them," which cannot be claimed for those which were not operated upon, either in their growth or afterwards.

Now, what am I to conclude from this? I should have been pleased for you and your scientific people to have come and witnessed the results, as well as other foremost men of light and leading now amongst you, who at one time of day would not have wanted pressing. I seem to consider the above application of far more importance to horticulturists than the sloppy mixtures, unless peradventure the wet can be subtly dispersed in the guise of dew. I think I have improved upon the Malbec bellows more simply in regard to the application for Potatoes—viz., Procure a fine hair sieve, or horse's-bait sieve, with a piece of fine muslin secured upon the wickerwork mesh, first having fastened a forked stick to the bottom, allowing a sufficiency of stem to serve for a handle ; suspend the sieve by the left hand over the Potato haulm, walk rapidly by the side of the row, and keep tapping the rim or side of the sieve with a short piece of stick, and please yourself whether to perform so again, or with the bellows. I never rode post for a patent, so there you are.

I have other reasons why I should have liked to receive a visit from you men of mark last season, because much advice is



booming in all directions anent "small holdings" and "allotments." Titled advisers, lectures here, and lectures there, many of them beginning from the "top stave of the ladder" in lieu of issuing from the bottom rung. I suppose my 15 acres may be called a "small holding," and my chief reason for coming to it was to enable me to end my Potato experiments in peace without a chance of being turned out or having to dodge backwards and forwards to Bedford in Middlesex, as I was obligated to do when I lived at Woodstock. I had fairly worked to the end of my tether here in improving our chief important esculent for food, when in came the fashion for monstrous tubers, to which I would not submit myself. It caused me, however, to resort to draining and levelling my land for planting fruit, forest, coniferous, and other trees, and to lay the chief of my arable to grass, with addenda for farm and house sewage, cowhouses, stable, barn, and sheds. It may be easy to lecture about "small holdings" and other things, but I do not often learn about expenditure. The above necessary improvements meant for me £1500 at least, with years since of waiting before much recoupment could be reaped for the outlay.

Pray do not wake up, sir, by suspicion that I am trying to wheedle you into politics! What I want to say is so intimately connected with the culture of our soil, that I hope you will allow me to explain that I am an Englishman, consuming my own produce, which I have in the main created, living on and out of it, and residing here long enough to behold it as a living grown-up *fin du siècle* lecture. I will not eat or use a particle that is foreign more than I can possibly help. I drink no beer because of the foreign malt, and eat scarcely any bread—or the compound that is called bread—because of its fabrication from foreign flours or mixtures; my Potatoes are far more nourishing. I would eat bread made from hearty English Wheat flour if any farmer near me would grind it. I have my own fed (chiefly upon my Potatoes) and home-cured bacon, poultry and eggs galore, home-made butter, and plenty of honest milk, home-made jams of all kinds—my "missus," you know, was taught her cooking at Her Majesty's School, Windsor Great Park, some forty to fifty years ago—home-made wines and cider; fruit, all the year round, beginning with green Gooseberries and ending with Wellington Apples on the same advent; in fact, we are nearly vegetarians; but when I do treat my family to a joint of fresh meat, I send to our local butcher and put him upon his honour to let me have a joint of bred and fed English mutton. I never became intoxicated; I never smoked a pipe of tobacco, a cigar, or cigarette in my life; and as I strike seventy-six to-day (February 1st) I do not intend to begin. I do an honest day's work of from twelve to fourteen hours, rarely missing, and I do not remember ever having to call in a doctor, which proves that the above system of living cannot be far wrong. You may say, "What has your system of living got to do with the readers of this paper, or with us?" Well, a mere old woman's bagatelle—let me say "a drop in the sea." But if millions of one's countrymen, not necessarily "small holders," would be patriotic enough to do as I do in their systems of living, and favour hearty English produce, it would prove a very good other side to the question, in affording a natural relief for the depression of our home industries, and also spur on the re-cultivation of our native soil; something more universally substantial for us than bothering at present about "Protection." That, I presume, will have to come from below, when the majority of us become "small holders," to find out where the shoe pinches. This may safely be deferred till—say the Greek Kalends.—ROBT. FENN.

## HARDY FLOWER NOTES.

### LYCHNIS CHALCEDONICA FL.-PL.

THERE are few flowers of summer possessing more brilliance than the double scarlet *Lychnis*, *L. chalcedonica* fl.-pl., known in olden times as the Double Scarlet Flower of Constantinople, or Nonesuch. A native of Russia, it probably came to us from the

City of the Golden Horn, whence in all likelihood it derived its popular name. The origin of the specific name is said to have been due to seeds of the single variety having been brought from Chalcedonia. The name *Lychnis* is derived from *Lychnos*, a Greek word signifying a lamp, and considerable discussion has taken place as to the sense in which the word has been applied to the flower, some considering that the downy leaves of some of the species were used as wicks for lamps; others that the inflated capsules resembled a lantern; and others, again, holding the opinion that the name was applied in consequence of the flame-like colour of the flowers. However this may be, there is no question that the last opinion would receive ample countenance from the flower under notice, for even in the brightest days of summer, when flowers seem to glow with colour, and when Nature has put on her most gorgeous floral attire, the double scarlet *Lychnis* stands conspicuous with its shining blooms. In Parkinson's time it was comparatively rare, and that true admirer of flowers describes it as a glorious flower. In after times it became more plentiful, and then the tide turned, and the ebb-tide of fashion carried the Nonesuch into comparative obscurity. Such a flower could hardly remain long neglected, and it is now more frequently met with, although still too rare. It is seldom, too, that we see it as it should be grown—i.e., several plants together; but more frequently a solitary specimen with a few heads of flower is what is found. It cannot be said, however, that the beauty of the plant is thus properly seen. The Chalcedonian *Lychnis* is stiff in habit, and lends itself better to grouping than to growing as a solitary plant. Place half a dozen plants together well back in the border in rich soil, and the result will be that they will make a notable feature in the garden.

The double scarlet *Lychnis*, although not what may be called a high-priced plant, is not a cheap one, and it may be well to indicate the method of propagation which was more largely carried on many years ago than now. Division of the plants in September may be adopted where they are large enough, but the best method is to take cuttings of the lower parts of the flower stems in July. There should be three joints in each cutting, and two of these should be beneath the surface. If watered and shaded these may be placed in the garden, but it is generally safer and more convenient to put the cuttings in pots and place them in a greenhouse or frame.

The double white Chalcedonian *Lychnis* is but seldom met with, a fact which is probably due to the greater popularity of the double form of *L. vespertina*, a most valuable flower. *L. chalcedonica* alba pl. is not equal in value, but unless the collection is necessarily limited it should find a place also. Three feet is about the ordinary height to which *L. chalcedonica* will attain.

### SERRATULA TINCTORIA.

In sharp contrast to the splendour of the double scarlet *Lychnis* is *Serratula tinctoria*, the Dyer's Saw-wort, a plant about which I have had some hesitation in writing.

The inclusion, however, of a bunch of the typical species and one of the white variety in a first-prize stand of twenty-four spikes or bunches of hardy herbaceous flowers, and the fact that I have frequently met with the plant in gardens as a *Centaurea*, leads me to think that a notice might be of some value. It may be as well to state that the prize stand was in competition with six or seven others from large gardens in most of which hardy flowers are largely and admirably grown, and also to make it quite clear that, although not personally interested in the show, I am not to be held as endorsing the award. So little known are the *Serratulas* that I do not recollect of meeting with any other plants of this genus in any private garden, and, with others, I have made many searches into descriptions of the *Centaureas* in hope of finding the name of this plant. It is undoubtedly, however, what Philip Miller describes as "*Serratula vulgaris flore purpureo*," the "common Saw-wort with a purple flower," the white variety being "*S. flore candida*."

Miller's description of the *Serratulas* is an admirable one for those who are not adepts in botanical terms, and when I say, as Miller says of the genus, that *S. tinctoria* "differs from the Knapweed in having the borders of the leaves cut into small, sharp segments resembling the teeth of a saw," a fairly accurate idea of the appearance of the plant is being given. I think, too, that Miller went near the mark when he said that this plant was seldom admitted into gardens, but that as a plant which would grow in the closest shade it might be placed under trees where it would thrive and flower extremely well, and add to the variety. This seems to be the plant now known as *S. tinctoria*.

It may be thought that too much space has been occupied with the *Serratulas*, but in view of the recent discussion on judging herbaceous flowers, and also from the knowledge that



many are in search of its name, I fancy it may not be out of place to speak of it now.

#### CAMPANULA LATIFOLIA ALBA.

A plant of a different order of merit, although a native also, is the white form of the Broad-leaved Campanula, *C. latifolia alba*. This is a flower which can be recommended with every confidence, although the genus is a large one, embracing many beautiful plants. I think, however, that this one should not be overlooked, although it is only fair to say that it is rather widely met with in cultivation. It grows from 2½ to 3½ feet in height with me, and is usually much admired, its long, pure white bells in long spikes being very attractive, while the serrated leaves are very pretty also. I had some flowers of this variety brought me from a wood in this neighbourhood (Dumfries) which seemed more clustered on the flower stalk than the variety in my garden. I hope to have an examination of these wild plants next season, as there may be some good forms discovered.

I have frequently observed plants in catalogues offered as *C. macrantha alba*, but have never yet seen a true white variety of the splendid *C. macrantha*, which is believed to be only a varietal form of *C. latifolia*. I have also communicated with many hardy plantmen on this subject, and nearly all agree with me that what is grown and sold as *C. macrantha alba* is only *C. latifolia alba*. I met with what was described as *C. m. alba* last autumn when in Renfrewshire, and was assured it was true to name. I have a piece of the plant, which was out of flower, but from comparison with *C. macrantha* which was growing beside it I could not refrain from stating that I adhered to my opinion, although I am open to conviction. No one who has seen the true *C. macrantha* in flower will ever confound it with *C. latifolia*.

#### VERONICA SPICATA VERA (?)

Troublesome as regards nomenclature as are many genera of hardy flowers, there are few more so than the Veronicas. One pink-flowered form has given me an endless amount of trouble, and although I have several names for it as grown in botanic and private gardens I do not feel confident that I have a satisfactory name as yet. I suppose most people will think, however, that *V. spicata* is so well known that there can be no dispute about it. It is, however, a variable species, and among other things it varies much in height, not only from the conditions of soil and climate but also naturally.

In the course of my wanderings among gardens I came recently on a small dwarf form, growing about 8 inches in height, and a very beautiful dark blue variety it is. It was grown as *Veronica spicata vera*, but has no more claim to the distinction of the name *vera* than any of the others. *Pumila* or *nana* would be more correct. Whatever name may be given to it, this is a very pretty little plant, and should be secured if possible, the short but good spikes of dark blue flowers rendering it very attractive, while its dwarf habit makes it exceedingly suitable either for the rockery or the front row of the border. It is a fitting companion to such dwarf varieties as *V. nummulariæfolia*, *V. prostrata*, or *V. corymbosa*. —S. ARNOTT.

### INSECTS OF THE FLOWER GARDEN.

(Continued from page 569, last vol.).

MERRY and joyous, to appearance at least, are the flies that belong to the family of the Syrphidæ. They are familiar objects in our gardens, and also about fields or woods, all of them lively in their movements, and many remarkable for their musical hum, though some are silent. Various are their shapes and sizes; several species much resemble bees, others have a compact look, but a rounded abdomen, others again exhibit long and narrow bodies. A few of them have the thighs curiously swollen, so that it might seem they were insects of leaping habit. A noticeable peculiarity of all is the convex head, flattened behind, the face often appearing nearly covered by the eyes, which are very large in some males; the tongue is usually bent in the middle, and has powerful muscles. Several species are amongst the blood-suckers, attacking both men and animals, but the puncture they make is not followed by the irritation which attends the bites of the gnat tribe. Some of them have heads brightly metallic, and their bodies are mostly banded with two or three colours, black being one of these; a few species are quite black.

With regard to their visits to flowers, the gardener has nothing to apprehend; possibly these flies may now and then prey upon smaller insects, but they do not damage the petals of flowers, though some bees are suspected of doing so. In the larval state many of them are really of notable service to us by their diligence in clearing off some of our garden pests, but one or two species that lead a subterranean life must have a bad character given them. A species

that darts from bed to bed in the garden so rapidly that we seldom get a good view of it has an oval abdomen, which is white and horny, translucent almost as it were of glass. Lacking an English name, we must give it the Latin one of *Volucella pellucens*; the larva or grub has its abode in the nests of humble bees, also of wasps, where it devours the young brood. A curious thing is, that these insects do not interfere with the intruding fly grubs; perhaps they are half afraid of meddling with them, for the larva of a *Volucella* is a singular object, in form like a rolling-pin, having a very small head and a body wrinkled and studded with points. Another species, *V. plumata*, has a near resemblance to the worker humble bee, being clothed in yellow, black, and grey; its antennæ are also feathered. The flies in the genus *Syrphus* are sometimes called Hawk Flies, the reference probably being, not to the carnivorous habits of the larvæ, but to the way in which they hover over flowers. Their habit is to poise in the air seemingly motionless, then make a sudden dart in some direction, and stop again, rapidly vibrating the wings when they do this. It is a fact not yet explained that there are years during which the hawk flies are abundant while in others few are to be found. Parties of them have been seen on the south-east coast of Kent, of several species mixed, which seemed to have crossed the Channel. *S. lucorum* frequents both groves and gardens; it is a pretty fly, chiefly black, but having a few patches of brown and yellow. Some naturalists have watched the mother fly of this species busy at the operation of laying eggs; these are placed, one by one, amongst the crowds of aphides, which, in spite of precautions, are sure to occur upon the leaves or shoots of various plants and shrubs.

A *Syrphus* larva has a pointed, leech-like head and a blunt tail, by the help of which and some tubercles it travels along, when it requires to make a change; usually it moves but little, finding plenty of food around. Most of the larvæ of this genus subsist upon aphides, and their method is to hoist each victim in the air by means of the mandibles, suck its juices, and let it drop. The growth of such larvæ is rapid, and when full fed each secures itself to a leaf, and a singular alteration occurs, as it becomes a pupa, the head thickens, and the tail becomes thinner, the larval skin forming a sort of cocoon. There is a little lid at the top, which the emerging fly pushes up, and departs to its life in the realm of air. One species, *S. pyrastris*, ought to have the special regard of admirers of Roses, as its particular food during growth is the aphides of that tree. It is a handsome fly, blackish-blue with a shining thorax and banded abdomen, covered by down of a light grey colour, or sometimes golden. From the way in which many of the aphid-hunting larvæ move their heads when they are in search of their prey, it is presumed they are blind, and discover it by the sense of touch. One of the hawk flies, however, is called the striped Onion fly, a little insect, prettily marked, but its progeny is a bristly grub, occasionally unearthed in the kitchen garden, where it is obnoxious to the Onion, also to the Carrot.

We have a rather brightly coloured but oddly shaped group of flies in the genus *Conops*, which resort frequently to flowers, not very correctly named either, for the word in the Greek means a gnat, or a gnat curtain; we have it also in our English word "canopy." These small flies are harmless in their perfect state; the mouth has no lancets, only a stiff proboscis; and honey is their food. Excepting in the form of the abdomen they have a decided resemblance to the solitary wasps, that make burrows in Rose or Bramble shoots and in decayed wood. As larvæ, it is presumed from the habits of some that the others are also parasitic; the larva or grub of *C. vesicularis* has been detected in the bodies of humble bees. The insect lives till full grown thus hidden, and then works its way out between the segments of the bee to become a pupa. It is remarkable that this curious resident in the bee's anatomy manages to avoid touching a vital part, for it survives usually the departure of this parasite for a short time. This particular species is black, red, and yellow; the wings are tinged with brown. Another pretty species is *C. flavipes*—a thin-bodied fly, black and gold. *C. rufipes* has the appearance of a miniature hornet. A rarer species occasional in gardens is called, from its largish head, *C. macrocephalus*. Its general colour is black, the head being yellow, and yellow streaks appear on each segment, the thorax having two silvery spots; the wings are yellowish, and the legs red; altogether a singular insect. How these flies manage to get their eggs deposited upon the bees they infest remains a puzzle.

An insect in this family that is an exception to most of them in habit is the Narcissus fly, or *Merodon clavipes*, these Latin names meaning "thigh-toothed" and "club-footed," for at the inner side of each thigh there is a strong tooth, and the hind legs are thickened or club-like. It is adorned with grey and golden hairs on the black ground colour, and visits flowers about April or May, having passed, singular to say, nearly a year in the pupal condition which few flies do. The grub or larva of this fly is a



round object, ringed with short hairs, the mouth being noticeable by two scaly hooks which project from its sides. Probably the mischief this larva does is partly attributable to the exudation from the body, which is of a slimy nature; by its mode of life it is hidden from view within the bulb, which it quits to enter the earth. The discovery of the pupæ amongst soil is not difficult, and they should be sought during autumn. This fly also visits other bulbous plants cultivated in gardens. — ENTOMOLOGIST.

### MARGARET CARNATIONS.

THESE beautiful flowers have in my opinion fully merited the high encomiums bestowed upon them when first put in commerce. Various opinions have from time to time been expressed, and, as might be supposed, their good qualities do not seem to fully satisfy all classes of cultivators, for it is scarcely possible that any race of plants, however good, will achieve that distinction when individual tastes, inclinations, and desires differ so much. I thoroughly believe, however, that an increasing number will ere long find out their great value, and will welcome them as a grand addition to late summer and autumn flowering plants. It is during that period that their usefulness is especially apparent. The ease with which they are grown, the comparatively short time which elapses from the sowing of the seed to the flowering stage, and the many beautiful shades of colour to be found in the flowers, combined with the good qualities previously mentioned, will assuredly secure for them great popularity.

Last season I obtained a couple of packets of seed from Messrs. J. Veitch & Sons. The seed of one packet was sown about the middle of February, and the other the first week in March, the latter sowing being made in a cold frame, and the former one in a pit, the temperature of which ranged upon 45° to 55°, in which position the plants were kept until growth was well advanced. The last week in April they were transferred to cold frames, and during the last week in May planted in mixed borders in the open air. From this sowing a few flowers opened in July, but flowering was not general till the middle of August, and continued to a limited extent till the end of October. The flowers seemed to withstand the vicissitudes of climate far better than many autumn-flowering plants, the heavy rains apparently having a less injurious effect upon them than upon Michaelmas Daisies. At the end of October many plants had still numerous well formed buds upon them. The best plants then were carefully lifted, placed into 5 and 6-inch pots, and put in a house which was given no more heat than was necessary to exclude frost. Very few buds were lost through the check experienced when lifted. These plants now look healthy and well, the buds showing every sign of affording useful flowers at the advent of warmer and brighter days.

The plants resulting from the March sowing have been kept in pots, and have proved of the greatest value. They were stood in cool frames till the beginning of June, and then placed in an open position out of doors. Shortly after this date they were placed in pots ranging from 4 to 6 inches in diameter, in which they flowered, the compost used being two parts loam, one part manure from a spent Mushroom bed, with a little sharp sand and soot added. A shady position was then given for a fortnight, during which time the plants were syringed freely twice daily. After this, they were again arranged thinly on a bed of coal ashes in the open air, and received a thorough syringing during the afternoon of fine days. This syringing is an important item in their culture, as it keeps them quite free from the attacks of green fly, and forwards their growth wonderfully. These plants afforded a number of flowers during the autumn months, and they are again beginning to open their buds. I have no doubt flowers might have been obtained throughout the winter if the plants had been given more heat.

In regard to the form and substance of the flowers obtained I may say they have varied greatly, but only a very few quite single ones were produced; some were good full flowers, quite equal to many border Carnations of acknowledged worth. The majority, though somewhat small, were of a sufficient size to be thoroughly useful for a variety of purposes in a cut state, and the flowers were so freely produced, and withal so deliciously scented, as to prove invaluable for room embellishment when left upon the plants.

A great variety of colours were obtained, the pink and rose shades being especially good. One variety, which I intend to propagate freely, has flowers of a more pleasing shade of colour than the well known Raby Castle border Carnation. I venture to predict that these Carnations have a great future before them, for with but little trouble they supply an abundance of beautiful and scented flowers at times of the year when they are especially valued, and as a stock for the hybridist to work upon they possess advantages not to be found in any other race of allied plants.—H. DUNKIN.



### THE ROSE DERBY.

SOME of your readers may possibly be pleased to know that I have recovered the shock received on reading the Rose column of the "Journal" of the 2nd inst. As to the "friendly criticism" published therein I reply shortly and scriam to the numbered statements.

1, To use a sporting metaphor, suitable to Mr. Pemberton's heading, he has made a false start. Although not a planet of acknowledged brilliancy, and "constantly on the move" since 1877, I yet claim to be a star of the fifth magnitude (which is the smallest size visible to the naked eye), and of 1878 *that* (and not 1889) being the year of my first appearance in the firmament of the N.R.S., Mr. Benjamin Cant of Colchester being my first instructor in the culture of Roses.

2, I am proud of the success my most diminutive garden has achieved. I do not deny it has merits, and I hope I have not unduly, or at any time, magnified its performances; its fault *is* its size, its drawback its position, of beauty it has none.

3, I neither have the wish nor the intention to turn a real pleasure into a business, and therefore even if I had the space I should not be in the least likely to grow maidens.

I could enlarge on this subject of growing maidens, but refrain from doing so out of respect for the amateur rosarian body in general. I have not the time to go all over the north country visiting Rose shows, nor can I see any advantage I should gain by such unnecessary trouble; our southern amateurs' and professionals' gardens and exhibits give me all the Rose education I am evidently sadly in need of. But I would ask this question, If the northern and midland growers, with the notable exception of Messrs. Harkness & Sons, are so superior in the latter half of July, why is it they do not enter the lists and try conclusions with Mr. B. Cant, Mr. F. Cant, and Mr. George Paul at the provincial shows? And to point the question, I instance the Show at Chester in 1892, when their Roses not only should have been but were in excellent form.

In conclusion, I leave the whole question as it is clearly put by your correspondent, "D., Deal," who ridicules the assumption of virtuous claims made by certain gentlemen writing nominally on behalf of the rosarians of the midlands and the north, but in reality playing for their own hand; and "D., Deal's," arguments being really unanswerable, I consider our position impregnable, at all events until the northerners have champions who can plead their cause in a more reasonable, accurate, and common-sense way.—CHARLES J. GRAHAME.

### NATIONAL ROSE SOCIETY—JUBILEE TROPHIES.

I HAVE inadvertently made a mistake with regard to these. I did not intend to include 1892 in the list of winners, and wronged my old friend, Mr. B. R. Cant, by omitting his name. The list ought to be: Nurserymen, 1887, 1888, 1889, 1890, Messrs. Harkness & Son; 1891, Mr. Frank Cant; 1892, Mr. B. R. Cant. Amateurs, 1887, 1888, Mr. T. B. Hall; 1889, 1890, 1891, Rev. J. H. Pemberton; 1892, Mr. J. P. Budd. This more correct list does not affect the point I intended to elucidate—viz., that the southern amateurs have taken the lion's share from their northern brethren.—D., Deal.

### THE NATIONAL ROSE SOCIETY.

It should be a matter of congratulation to Mr. Grahame and myself that we have "drawn" "D., Deal" (page 89), who even in a private capacity speaks with authority and experience. I quite agree with him that it is highly satisfactory for the Society that we have a Secretary who is not an exhibitor, and yet kindly devotes so much of his time and experience to the matter. A secretary who does not exhibit is as much more suitable to a Rose society than one who does as a non-playing secretary in a cricket club is to one who does play, provided in both cases the enthusiasm can be kept up. But in such a cricket club the secretary should in some matters take counsel with the playing members, as they will have more knowledge; and so it should be in the N.R.S., which has ordained that its most trusted temporary officials, the Judges, should be chosen from successful exhibitors only.

I, too, think it high time that those who "write so loftily of arrangements" (I do not feel very guilty) should know that, according to "D., Deal," "we are quite dependent upon the Crystal Palace Company for having any metropolitan show at all." It certainly seems a very poor and subservient position for such a Society as the N.R.S., and I hope every member will take it to heart, and by diligent inquiry, hard thinking, and hard working do his best to devise a way for our delivery from such fetters. I am surprised that Mr. Head should complain of "great gaps." Is not every secretary of a Rose show in a state of preparation for gaps, ready to put the boxes a little way apart, and if necessary to fill up really "great" gaps with pots of flowers or foliage, or something? And surely Mr. Head's complaint of gaps should not be of much moment in comparison with that of an exhibitor who has "paid his money," but cannot find any place, much less "take his choice."

I am sorry to hear that it is "a very idle matter to compare the arrangements of a great show at the Crystal Palace to any provincial



one" when the said comparison is to the discredit of the former, and I am sure the members of the N.R.S. will agree with me.

It is not wise, as a rule, to say "the cap fits;" but the picture of an exhibitor who, on being asked to clear out, folds his arms and steadily refuses to do so until he gets a place for his box," does, I admit, represent me fairly enough. Whether it will be a faithful likeness of my attitude on July 1st, 1893, depends, I now understand, entirely upon the Crystal Palace Company and Mr. Head.

"D., Deal," next reflects sarcastically on the "virtuous claims" of the advocates of a later date. He applies a simple "tu quoque" to my statement that I heard no reasons put forward by the advocates of an early date except that their own Roses would be over at a later one; but he does not notice the concluding part of the same sentence, "that the supporters of Mr. Pemberton's motion had so many arguments of all sorts that the time would not suffice for them." This denied the "tu quoque" beforehand, and Mr. Pemberton's letter on the same page as his own sufficiently disposes of this weak rejoinder.

"D., Deal's," next two arguments seem to me to prove just what he does not want them to do. He actually takes up the cry raised at the general meeting of the fewness of northern members, apparently as a reason for not taking them into consideration, without seeing that it is *because* they have not equal privileges with others that they are so few in number. He then goes on to show of the Provincial Exhibition that "the Jubilee and most of the principal prizes have gone to Essex, Somerset, Gloucestershire, Herts, &c.," and does not see that this proves that a later date suits all these counties as well as northern ones.

With all that he says upon judging I quite agree; it would be impossible, even if advisable, to judge the medal Roses after the classes. But I am surprised that Mr. Grahame (on the same page) does not know that a knowledge of Roses as grown on different soils is desirable in a judge. Has he not noticed, when visiting the gardens of other growers, certain marked differences in some varieties as grown on different soils? For an instance or two: my plants of Beauty of Waltham are fine, to all appearance it "does well" with me, yet Mr. Pemberton's blooms of the same variety are not only better in size and colour, but there is also apparently a difference in character, and it would require experience to know that the variety is true in each case. Prince Camille de Rohan, nearest to black on a good Rose soil, will only come deep crimson, quite different in colour, in some other places. And who but Mr. Prince can show Comtesse de Nadaillac successfully in the class for yellow Roses? I have had the medal first two or three times at least, but it is always more pink than yellow with me. These are but examples of the many idiosyncrasies among Roses. How then can a man, merely from a study of his own garden, though it be as minute as possible (the study, not the garden!) expect to equal in experience a wider observer?

I agree, however, with what Mr. Grahame says about giving no points to moss, &c., if possible, but we are bound by the rules, which (v. 5) say, that in case of equal merit in blooms we should consider other details. In such instances there would have to be a large discrepancy in all these matters put together to prevent my judging the stands as equal, in all cases where the prize can be divided; but where there is a cup or trophy one must decide if possible. In the best prize (cash) I tried for last season the Judges declared my blooms and my opponent's to be equal, but gave him first because his blooms were "a little" (their words) better set up.

As to the question of proxy voting, "D., Deal's," objections seem to me ("naturally," he will say) to be answered by my remarks immediately opposite; and his principal argument (well illustrated by the story of the cart before the horse—I mean the collection before the sermon) to be met by a sentence of his own at the commencement of his letter of two columns, where he says that "he does not suppose that anything he will write will have the least effect upon any of the disputants." It is not denied that voting in person is best, but it is argued that proxy voting for members at a distance is better than so taxing their votes as practically to disfranchise all but those with plenty of money and leisure.

But bearing in mind what has been said, and without in any way committing myself to it, how would the supporters and opponents of proxy voting like this compromise? "That at a general meeting, voting by proxy shall be allowed on any subject which has been debated at a previous general meeting." Let it be understood that I ask the opinion of members of the N.R.S. upon this matter "without prejudice," or promising to give up the original motion.—W. R. RAILLEM.

#### NATIONAL ROSE SOCIETY.

A LINE of congratulation, Mr. Editor, upon the "rosy" character of your last issue. My good friend, Mr. Grahame, has met me several times during the last few months with the lamentation, "How is it there's nothing about Rose matters in the *Journal* now?" but I think the last number will satisfy even him.

#### THE METROPOLITAN SHOW.

"D., Deal," claims great advantage from the fact that in discussing this matter he speaks as a non-exhibitor, but he seems to forget that

there is another side to this question, and one which rather tends to discount anything he may say upon the matter. The rule of the N.R.S. concerning judges is, "They shall be selected principally from successful exhibitors," and this rule was adopted because it was felt that those who were not at the present moment exhibiting as well as growing were not in a position to correctly gauge the merits of the flowers staged. The same reasoning may surely be fairly applied to such a matter as the best date for the Show, and so your correspondent is put out of court upon his own ground of not exhibiting.

"D., Deal," then goes on to say that "Since the retirement of Mr. Whitwell and Mr. T. B. Hall we have no amateur grower of the first class in the north;" but he entirely fails to recognise the fact that this is mainly caused by the date of the metropolitan Show being far too early for the northern men, who very naturally see no reason for subscribing as long as it remains impossible for them to compete at the Exhibition of the Society. Those who have been on the Committee for any length of time cannot fail to remember how strenuously Mr. Hall used to urge that it was impossible for the northerners to be ready, and it is an open secret that the loss of his support, both of the Society and of the Shows, has been caused by the persistent sticking to the late date. The same cause, I am informed, contributed largely to Mr. Whitwell's withdrawal. If Mr. Pemberton's motion were adopted, and so it made possible for the metropolitan Show to fall as late as July 9th once now and then, there would very speedily be no room for the question, "Where are the Northern Exhibitors?"

#### PROXY VOTING.

As this proposal seems to be beset with difficulties (though I certainly think these are more imaginary than real), may I suggest that when an important matter, such as the proposed alteration of date, or the like, arises, a *plébiscite* of the members should be taken by post, and action determined accordingly. Post cards are cheap, and if this course were adopted members who are hindered by distance from coming up to vote would feel that they still had some voice in the affairs of the Society, and their interest would be maintained and increased.

#### TEAS IN MIXED CLASSES.

Closely connected with the early date of the metropolitan Show, a grievance has arisen as to boxes containing nothing but Teas and Noisettes winning the prizes in the mixed classes. There is a provision in the rules that Teas and Noisettes shall have no especial favour shown them, and yet in three mixed classes at the last Crystal Palace Show boxes of Teas only were allowed to win, while if a solitary H.P. dared to show itself among the Teas and Noisettes the stand would be at once disqualified. What about "No especial favour" after that? Under ordinary circumstances perhaps there would not be much hardship, but Teas are always at their best a fortnight before the bulk of H.P.'s, and when the latter are further handicapped by such a date as July 1st, it gives the Tea men a great pull, and I certainly think there should be a provision that in the mixed classes not more than one-third of the required number of blooms should be Teas. Bearing in mind the large and increasing provision which is made in the schedule for Teas only, such a regulation seems to be a measure of the barest equity.—J. B.

#### MOSS.

It is a very doubtful point indeed whether in awarding prizes the dressing of a stand comes into the decision. Like "W. R. Raillem" (page 70), I cannot say that in judging the moss, or any substitute for the same, has ever caught my eye. Like the *tout ensemble* of the stand, it seems to me it can only come into competition when two stands are so absolutely equal that there is no saying which is the better. Even then, excepting when a cup is at stake, it would be far better to add first and second prizes together, divide, and award equal firsts. This, however, is matter of opinion, and as such alone do I give it. I was not fortunate enough to see the Peterborough grower's stand, but I have often thought that, given a good shade of green, that velvet would be the thing (my daughter, hearing this, says "plush"); but then, look at the expense. We cannot exhibit Roses without water, and every spot of water would show, for both velvet and "plush" would "set up their backs" at a drop.

For Chrysanthemums I have used green baize; that stands the wet, and I (but then it was my own child) did not think the baize by any means a bad substitute. Most of us have something to cover the boards. Mr. Molyneux, I think in his book on the Chrysanthemum, says they look better on the plain board than on anything else; but I am afraid that most of our Rose boards, like a school child's letter, would not "bear inspection" because pierced by different numbers of holes—any way, mine are! It has occurred to me that worsted or wool might be made useful in this direction. The method that strikes me is this—say twenty threads of worsted, an inch off another twenty, these crossed by other lines of twenties, either tied at every inch where they cross or knotted, then when thus firmly tied let half the threads be cut through and fluffed out. But to come to moss.

I recollect in my early days a lady saying to me something like "W. R. Raillem's" speech. "What beautiful moss yours is!" I certainly agreed with her; and to my mind if moss is the thing that sort appears to me the best. I always used to get it off the large coping Bath stones on the top of walls. This moss lies close to the stone, is not more than half an inch thick; may be got off with a blunt knife in large pieces where found, but is not very common. If dry and brown, I brought it home, plunged it into a bucket of water for twenty-four hours, then



squeezed it nearly dry and spread it out. In another day it would recover its lovely green colour and be fresh, though, of course, it is best in moist dripping seasons. It lies close on the boards, allows one to



FIG. 16.

push a tube through, and to my mind is the Al covering. It is a beautiful dark green when in condition. This I have afterwards laid on the tiles, and some of it has grown there. The moss on thatch is very different. It is very thick, sometimes 1½ inch, and does not lie evenly on the board. In some parts of Longleat Woods, at the roots of some of the trees, a beautiful kind of moss is found often; also growing amongst the grass on some of the banks. It is more like fronds of Fern, some of which are 4 inches long. I have seen this used often, but beautiful as the moss is by itself, it always appeared to me untidy as a covering; moreover, the colour is a greenish yellow, and rarely all the same shade. Some years ago, when moss was discussed, it was said by some exhibitors that the dampness of moss dulled the colour of the Roses. If this is true it is a serious objection to moss, and a dry substitute would be welcomed.

The moss I speak of as being found on the coping stones of walls, grows rapidly. For years I took off all I could find, with the exception of little stray pieces, yet in course of the winter the same spots would be covered again. It grows best where overshadowed by trees.—Y. B. A. Z.

#### RAISING SEEDLING CARNATIONS.

THE raising of seedling Carnations is one of the most fascinating pastimes the experimenter can engage in. It is fraught with hopes, fears, and disappointments, and frequently, to the severely practical man, apparently unjustifiable elations. There is a number of practical florists, and some amateurs, engaged in the raising of seedling Carnations with a view to their improvement, and there are many others who would take up this laudable undertaking if they knew just where to begin. It is for the latter class that this article is prepared.

It is interesting to know the origin of meritorious varieties, not for the purpose of repeating the experiment, for it is ten thousand chances to one that the results would be the same, for there are rarely or never two varieties that might be pronounced identical even from the same seed pod. But it is so much knowledge to our credit, and it may act as a guide for future operations. Though he who thinks he will electrify the floricultural world by his achievements after he has earned the pedigrees of the best sorts by heart may be disappointed, yet such is among the possibilities. A novice might effect a cross between two varieties without any idea as to what the effect would be, and the result might be greater than that of a person who has been experimenting with a definite object in view for years. This is where that element which is known as luck comes in. Yet there are very few, I venture to say, who have ever indulged in this mild form of excitement who would throw aside system, no matter how fortunate someone



FIG. 17.

else may have been in a haphazard way, and depend entirely upon luck. I believe in pedigrees, for by careful records, with close observation, we may note the influence of varieties as breeders; some may be much more potent than others.

In explanation of the illustrations, fig. 16 is a Carnation flower

showing the pistils prominently, which may be called the pistillate, seed or female parent, all of which are synonymous terms. Fig. 17 is a flower which shows the stamens conspicuously; these furnish the pollen with which to fertilise the pistillate flower. Generally speaking, a Carnation flower may be made either the pollen or the seed parent, as the operator may determine, though there are exceptions to this rule. I found this out some years ago when hunting among some flowers of the variety Duke of Orange for pollen, but not a grain could I find. On the other hand, I have operated upon varieties which did not produce perfect seeds.

In fig. 18 we find a representation of a flower ready to be operated upon. The petals have been carefully removed with the finger and thumb, part of the calyx has been cut away by a sharp pair of scissors, showing the ovary with the pistils standing out above.

Fig. 19 gives the stamens and pistils. The stamens are the more apparent, and shows the pistils before they have developed far enough to be fertilised.

Fig. 20 is similar to the last. On close examination it will be seen that some of the pollen cases have burst, thus freeing the meal-like pollen, which may be carried by a camel's-hair brush, to which it readily adheres, and applied as seen at fig. 21, where the operator is in the act of applying the pollen. Camel's-hair brushes may be obtained at a trifling cost. Where there is any choice it is best to select the darkest brushes, as the pollen grains are more readily seen on this material than when it is of a greyish colour, thus giving the practitioner a better idea what he is doing. In all our operations there is always a danger present and a possibility of self-fertilisation. To avert this it is better to remove all the petals and stamens at an early stage of the flower's development, before the stamens have had time to ripen its fructifying grains, thus destroying a possibility of frustrating our plans.

Fig. 22 gives an idea how the seed pod should look when it has advanced somewhat, although this cut is more to show the manner of keeping a record of the cross made. Some prefer to mark the tag only with a number and to keep in a note book the full particulars, but if the note book happens to get lost the numbers are very little value. A full record on the tag is best, I think; then there is little or no danger of losing it. It is cheaper to buy the little tags than to make them. They are sold with strings already attached, which renders them easily adjusted, and gives the whole operation a neat and workmanlike appearance. In recording the cross, the name of the seed parent comes first. Whether it is correct to make a plus mark or a multiplication mark (×) I have not been able to determine.

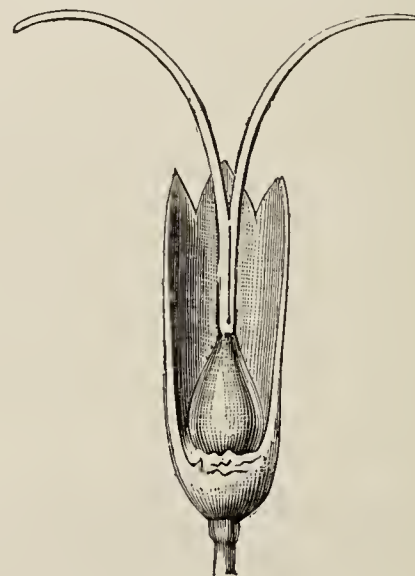


FIG. 18.

We may multiply varieties without adding to their quality. Each one may make the mark which suits him best.—EDWIN LONSDALE (in "The American Florist.")

#### NEW ZEALAND GARDENS AND CLIMATE AT CHRISTMAS.

I HAVE recently received the enclosed newspaper cutting from a relative at Auckland, New Zealand, to whom I occasionally send your paper, which I take in regularly. I thought you might like to insert it as showing what a splendid climate our colonists there possess, and what a fine season they appear to have had this last summer of theirs, corresponding in time to our winter here.

I may mention that my relative takes a great interest in his garden, and last year he sent me in March, which I received in May, a box of freshly gathered Northern Spy Apples of his own growing, which reached me in excellent condition, coming by steamer in one of the cool chambers. They were splendid specimens both in appearance and flavour, and averaged a weight of three-quarters of a pound each.—CHAS. H. PAGE, *Dulwich House, Cardiff.*

We insert with pleasure the extract from the New Zealand paper, dated December 23rd, 1892, as sent to us by Colonel Page; it is as follows:—

"The splendid weather we are having has afforded ample opportunity for destroying weeds and placing the whole of the garden and grounds



in neat and trim condition, in keeping with the holiday season we are now about to celebrate, and in giving the operator leisure to thoroughly enjoy the result of his or her past labours. There should not be a vacant or unplanted spot in either the flower or kitchen gardens. Both should now be replete with flowers and vegetables of every description. Happily, with us in New Zealand, the festive season comes when this can be accomplished, as the various departments may now be stocked with almost everything that is suitable for our climate. At this Christmas Nature is more beneficent than usual, bestowing her gifts with such wonderful profusion that even the most callous amongst us cannot but be struck with admiration at the endless variety of beautiful trees, plants, flowers, and fruits that everywhere abound, and by the verdure of the grass and other natural products that clothe and adorn our beautiful landscape. The frequent genial rains and splendid growing weather experienced throughout the spring, and up to the present time, have imparted an unusual health and vigour to plant life, and aided in maintaining that freshness of foliage and appearance that everywhere meets the eye and gladdens the senses, adding also further to the charms and pleasures of the open air.

"Visitors to this remote region of the globe carry away lasting expressions of our genial climate and picturesque surroundings. Happy, indeed, should be our lot, living in this fair land of sunshine and flowers, and in a climate free from the extremes of heat and cold, and where our homes may be made bright and cheerful with the bountiful

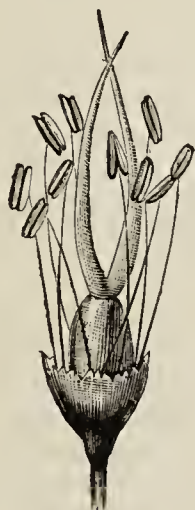


FIG. 19.



FIG. 20.

products of the land. Here in our island home rich and poor alike can revel in sunshine, and pass a pleasant time with but comparatively little outlay. How different to the Christmas that many of us have been accustomed to where hard cold winter, with its frost and snow, was the natural harbinger, and where flowers and fruits could only be obtained by artificial means. Here our splendid climate and natural resources afford pleasures that are unobtainable in less favoured regions, and where the festive season takes place in the winter.

"Our Christmas Tree, the Pohutukawa, takes the place of Holly and Mistletoe, the natural emblems of this season in England. This magnificent tree may be seen growing along our coasts laden with the utmost profusion of conspicuous dark red blossoms, standing out in bold relief from the endless variety of the surroundings. Truly, ours is a land of fruit and flowers. Both may now be had in abundance. In fact, nothing is wanting as far as Nature is concerned in adding to the pleasures of the present season. In addition to our own temperate fruits, tropical fruits, such as Bananas, Oranges, Pine Apples, Mangoes, and other dainties, the products of the adjacent islands, are within the easy reach of all, a privilege that can be enjoyed to the fullest extent in this southern hemisphere. The endless variety of flowers that now adorn our garden and grounds not only add to the outdoor enjoyment, but are also useful for gathering to beautify and enliven the dwelling. There are now such a host of beautiful varieties in flower that it is needless to attempt to enumerate even a small number. The season has been one of the most favourable for the growth of the different garden products that has been experienced for many years."

The Christmas scene described by the writer is, we have reason to know, described with accuracy. New Zealand is a magnificent colony with in most parts a rich soil and delightful climate. A thirty years' resident refers to it as a "land of health and plenty, where all who are able and willing to work for a living will find a good one in the beautiful land." The Pohutukawa tree alluded to is a species of *Metrosideros*, laden with crimson bottle-brush flowers in November and December.

#### PRICES AND QUALITY OF APPLES—MANURE.

MR. KRUSE returns to the subject of the price and quality of Apples only to bring the same charge of irrelevancy against two other correspondents as he has brought against myself. In his first communication he wrote, "At the time Domino made about 1s. home, larger sorts made 2s. per bushel home for selected fruit. It is true that some of the others made sometimes during the season 6s. per bushel in Covent Garden, or about 4s. 9d. home, but this was very exceptional and not the rule." Why, in the face of these words, does he persist that to refer to other

varieties than Domino is to wander from the point at issue? Clearly and unmistakeably because it has been abundantly proved that notwithstanding his repeated laudatory remarks about his own fruit that of

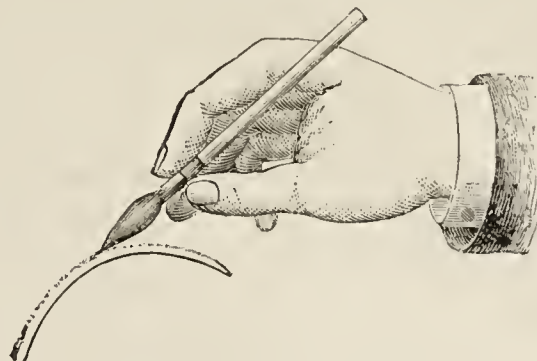


FIG. 21.

other cultivators has fetched a better price in the market. Before superior returns were quoted against him he was prepared to refer to the prices brought by other varieties, but afterwards he discovered that they were a "side issue" and became anxious to retire from the "wordy controversy."

As I have forwarded documentary evidence in proof of the statements which I have made that what are "exceptional" prices in the case of Mr. Kruse's fruit are not so in another, and several other correspondents have come forward to support me, surely the wisest and most dignified course for him to pursue would be to take a broad and comprehensive view of the position, and cease these futile endeavours to find protection in a shelter which his own words have shattered. There is a great question at issue, one on which it is of the highest importance to have an accurate reply. I did not cross swords with your correspondent on this matter without preliminary deliberation, for as an experienced and observant cultivator his opinions were entitled to a respect which I do not claim as an equal due for myself; but facts in my possession proving indisputably that there was another side in addition to the one which he took up, I set myself to present it clearly and correctly before your readers. Whether I have succeeded or not is for them to judge. I have not replied in kind to charges of "heat" and "superficial knowledge," partly because I have had a long enough experience of the ways of the world to be able to smile at these things as matters of course, and partly because I have no sympathy with endeavours to degrade a great public question to the level of a personal controversy.

I know not from what point of view readers in general view this question of the profit of fruit growing, but it must seem to many to have issues too momentous to rest upon personalities. There is work to be found for thousands of willing hands and food to provide for our teeming millions. Can English soil provide both by corn growing? No, and we look to fruit as an adjunctive aid to cultivators. Only thoughtless and irresponsible agitators will proclaim it a mine of wealth, but if a fair return can be realised it will be of great benefit to the country. Working from this standpoint it has been my endeavour to show what can be done with energy and enterprise combined with cultural skill. Neither yards of figures nor clumsy methods will avail. The former tempt, but they do not produce. The latter may have some



FIG. 22.

results, but they will be unsatisfactory and profitless. With care and judgment waste acres may be made productive, and, as at Swanley, where the skill and courage of Mr. Henry Cannell have set so valuable an example, the land that has fed the few becomes capable of feeding the many.

A few words as to the manures. Mr. Kruse says that his statements on the subject are facts. If he will turn to his article in the *Journal* of December 15th he will find that he advanced £500 a year as his annual



expenditure on manure, not as a fact but as an "estimate," and estimates are made to be criticised. It is extraordinary that he should meet my request for particulars about what he is doing now with manures by referring me to what someone else did in another district upwards of twenty years ago. But to oblige him I have turned up the articles referred to and found, as I expected, that for practical purposes there is absolutely no connection between the two cases. Your correspondent has estimated that he spends £12 10s. per acre annually on manure for land, "all of which is under fruit cultivation." What comparison is there between this and £20 per acre expended on land under market vegetables? Mr. Kruse appears to rely upon mulching, but how under this practice he utilises the enormous quantity indicated by his "estimate" of £500 a year for 40 acres of land I fail to see, and I happen to know that many others share my difficulty.

I observe that although Mr. Kruse advances 10s. per ton as the cost of stable manure, he is careful to avoid saying that it costs this to him. The price appears to represent what someone else has paid elsewhere. Further, he adds that the cost of labour is to be added to that of the material, although when he first wrote he spoke of his "manure bill" alone. When a man uses this term he is generally understood to mean the cost of manure to his premises, not the application of it as well. This generally comes in the wages account, and in his previous letter Mr. Kruse made a separate charge for this of another £500 a year. From this it will be seen that he declines to supply the only information which would be of practical use to readers. The grounds for refusal are by no means satisfactory. He bases them on the assumption that the information is sought with a spirit of finding fault. If, however, his estimates are accurate and his methods sound, surely the best plan of bringing carping critics to grief is to supply the explanations asked for, not to take refuge in silence. That which is right and good will stand the test of fault-finding. However, he distinctly refuses particulars, and there, I suppose, the matter ends. The salesman's returns, giving prices home to the grower of Apples, that I have sent to the Editor show clearly that Mr. Kruse is less fortunate than some others in his sales, and those returns, which no one can question or explain away, are ample justification for what I have said on this subject.—W. P. W.



**EVENTS OF THE WEEK.**—As stated below, the Committees of the Royal Horticultural Society will meet at the Drill Hall, James Street, on Tuesday, February 14th, and the annual general meeting of the Society will be held at 3 P.M. The Committee of the National Rose Society also meet at the Hotel Windsor on Tuesday afternoon, and the annual dinner of the Horticultural Club takes place in the evening at the same hotel.

— **THE WEATHER IN LONDON.**—The weather in the metropolis has been of a variable character during the past few days. Sunday proved cold and frosty with local fogs, freezing hard at night. On Monday morning a thick fog prevailed in the north of London, but it cleared during the day and became milder at night. Tuesday was fine, mild, and springlike, similar weather prevailing at the time of going to press.

— **WEATHER IN THE NORTH.**—The first week of February has been on the whole mild for the season, the days generally dull with occasional showers and a touch of frost on two mornings. Sunday was for some hours almost spring-like in temperature and brightness, but became cold and dull in the afternoon. Snowdrops are in bloom, and Crocuses are showing above ground. Roses seem terribly cut up by the frost, not a few killed outright.—B. D., *S. Perthshire*.

— **ROYAL HORTICULTURAL SOCIETY.**—The next meeting of the Society will be held on Tuesday, February 14th, at the Drill Hall, James Street, Westminster. As the annual general meeting will be held the same day at 3 P.M. at the Society's offices, 117, Victoria Street, it is expected that there will be an unusually large attendance of Fellows to hear the report of the past year.

— **FRUIT CULTURE IN THE SCILLY ISLES.**—A western contemporary states that during the next few months an enterprising syndicate of fruit growers will lease the entire group of the Scilly Isles from the proprietor, and English-grown Oranges may in the near future be competing with Valencias in Covent Garden Market. No snow has fallen at Scilly since the spring of 1890.

— **NATIONAL AMATEUR GARDENERS' ASSOCIATION.**—The members of this Association held their second annual general meeting at the Memorial Hall, Farringdon Street, on Tuesday, February 7th, under the presidency of Mr. T. W. Sanders. The report of the Committee showed that much good had been accomplished by the Association, and that there were now upwards of 400 members, with several affiliated societies. According to the financial statement, too, there is a satisfactory balance in hand, and this, with an excellent syllabus for the ensuing year, augurs well for the future success of the Association. A Fellowship of the Association was conferred on Mr. G. McLeod of Chingford for valuable services rendered, this being the first distinction of its kind bestowed on any member since the inauguration of the institution.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the ordinary meeting of this Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 15th instant, at 7 P.M., the following papers will be read:—"Report on the Phenological Observations for 1892," by Edward Mawley, F.R.Met.Soc.; "Relation Between the Duration of Sunshine, the Amount of Cloud, and the Height of the Barometer," by William Ellis, F.R.A.S.; "Winter Temperatures on Mountain Summits," by W. Piffe Brown.

— **"KARRI" WOOD FOR PAVEMENTS.**—At a recent meeting of the Royal Botanic Society of London, it was announced that the donations included specimens of the Karri wood, a hard reddish-coloured timber produced by one of the Australian Gum trees, *Eucalyptus diversicolor*, and now imported to a large extent for paving roads. The Secretary stated that, though Australia abounded in useful timbers, few of them had been utilised to any extent in England.

— **VALUE OF A CHERRY TREE.**—"A question as to the value of a Cherry tree," says the *Kölnische Zeitung*, "has just been decided at Niederlahnstein, in Germany. The ground whereon this Cherry tree stands is required for the widening of a railway station at that place. The owner of a tree put in a claim for £180, which he said was the amount he obtained yearly from the fruit the tree yielded. After some spirited contention on both sides the owner somewhat reluctantly consented to accept £120." Is not this a "chestnut?"

— **TOBACCO CULTURE IN AUSTRALIA.**—It is rather surprising that Tobacco has been so little cultivated in Australia. The *Agricultural Gazette* of New South Wales has taken up the matter, and in a recent number devotes to it a comparatively long and interesting paper. The writer of the article thinks that the climate of New South Wales is admirably suited to the growth of Tobacco, and hopes that a sufficient quantity of it may hereafter be produced not only to satisfy local demands, but to open up a large and lucrative export trade.

— **A CARNATION NUMBER.**—Our excellent transatlantic contemporary, *The American Florist*, keeps well to the front. A few weeks since we referred to its special Chrysanthemum issue, and now we have a Carnation number before us. It is replete with pithily written useful information about these beautiful flowers. The illustrations, moreover, are plentiful and admirably executed. The portion of an article on raising seedling Carnations, which we reproduce with the accompanying illustrations elsewhere in the present issue, will doubtless be appreciated by our readers.

— **AMALGAMATED HORTICULTURAL SOCIETY FOR GRAVESEND.**—At the Town Hall, Gravesend, a meeting was recently held to inaugurate the newly consolidated Horticultural Society, which was formed upon the dissolving, by mutual agreement, of the three old Associations, the North Kent Chrysanthemum, the Gravesend Horticultural Improvement, and the Gravesend and Northfleet Horticultural. The Mayor (Mr. G. M. Arnold) presided, and there was a large attendance. The amalgamation will be known as the Gravesend, Northfleet, and District Horticultural Society.

— **CORBRIDGE AND DISTRICT GARDENERS' SOCIETY.**—A meeting of this Society was held in the Town Hall on Monday, January 23rd, Mr. Charlton, Farnley Grange, presiding. Mr. W. J. Watson, Corbridge, read a paper entitled, "My Experiences as an Exhibitor of Spring Flowers." Having been a successful exhibitor for many years at Newcastle and other Shows, Mr. Watson's account of the various exhibitions he has attended was most interesting. He gave some good information on bulb growing, which was much appreciated by all present. Mr. Bell proposed a vote of thanks to Mr. Watson for his excellent paper, also to the Chairman who so ably presided.



— THE SALE OF FRUIT.—It is stated that Sir William Hart Dyke intends to introduce a bill into the House of Commons relative to the regulation of the sale of foreign and colonial fruits.

— LONDON COUNTY COUNCIL APPOINTMENT.—We are informed that Mr. G. Gensel, Assistant in Kensington Gardens and Hyde Park, has been appointed landscape draughtsman in the Parks Department of the London County Council.

— BOTANIC GARDEN APPOINTMENT.—Mr. Robert Harrow, formerly of Cambridge and late of Kew, has been appointed recently from the latter establishment to the foremanship of the houses in the Royal Botanic Garden at Edinburgh.

— THE JUDAS TREE.—AS yet no gardener has, it appears, answered my query (page 49) about the presumed poisonous quality of the honey of the Judas Tree. Perhaps it is a statement that seems too absurd to call for a reply, especially as it comes from across the Atlantic.—J. R. S. CLIFFORD.

— RAINFALL IN SUSSEX.—The total rainfall at Abbot's Leigh, Haywards Heath, Sussex, was 2·04 inches, being 0·20 inch below the average of mid-Sussex. The heaviest fall was 0·67 inch on the 9th. Rain fell on fourteen days. The maximum temperature was 51° on the 31st, the minimum 15° on the 4th and 5th. Mean maximum 39·1°, mean minimum 30°. Mean temperature 34·5°; slightly below the average.—R. I.

— THE WEATHER LAST MONTH.—January was a changeable month with very little sunshine; we had nine bright days, one of which was clear. The wind was in a westerly direction for twenty-one days. Barometer, highest 30·39 at 9 P.M. on the 4th; lowest, 29·57 at 9 P.M. on 16th. Total rainfall 1·45 inches, which fell on twenty days; the greatest daily fall being 0·28 inch on the 26th. The total is 0·48 inch below the average for the month. Highest shade temperature, 52° on 30th and 31st; lowest, 5° on the 5th; lowest on grass, 3° on the 5th. Mean of daily maximum, 40·03°; mean of daily minimum, 28·77°. Mean temperature of the month, 34·30°. The garden spring ran 24 gallons per minute on the 31st.—W. H. DIVERS, *Ketton Hall Gardens, Stamford*.

— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS.—January, 1893.—Mean temperature of the month, 35·5°; maximum on the 31st, 54·7°; minimum on the 5th, 8·5°. Maximum in the sun on the 31st, 93·4°; minimum on grass on the 5th, 6·1°. Mean temperature of air at 9 A.M., 34·7°; mean temperature of the soil 1 foot deep, 34·3°. Nights below 32°, in shade seventeen, on the grass twenty-five. Total duration of sunshine thirty-four hours, or 14 per cent. of possible duration; we had sixteen sunless days. Total rainfall, 1·37 inches; rain fell on seventeen days. Average velocity of wind, 9·8 miles per hour. Velocity exceeded 400 miles on three days, and fell short of 100 miles on two days. Approximate averages for January:—Mean temperature, 37·1°; sunshine, 35; rainfall, 1·69. The first week was very cold, after which it turned rather milder; but the thaw was a slow one, and the frost was not out of the ground until the 22nd. The rest of the month was mild. Mean temperature about 1° higher than the last two Januarys. Snow on the ground for the first twelve days.—J. MALLENDER.

— LILY OF THE VALLEY.—Having been rather successful with the culture of Lily of the Valley this season, a few details of the treatment we have given them may perhaps be interesting to readers of the *Journal of Horticulture*. In the first place it is absolutely necessary to obtain good crowns. Having secured these, place them in 5-inch pots, using a mixture of loam, leaf mould, or some old peat. From fifteen to eighteen crowns will be found sufficient for one pot. Great care must be taken to ram the soil firm. After potting they should be stood outside, and the crowns well exposed to the frost for a few weeks. Introduce as required, and stand them in shallow zinc tanks over the pipes in the forcing house, keeping them dark, and taking care to maintain a moist atmosphere. A little moss placed over the crowns will assist in keeping the soil moist, which is most essential. After they have started and began to show the flower spikes remove to a close frame inside the forcing house, gradually introducing them to the light. When the flower spikes are well advanced they may be brought out and gradually hardened for the purposes they are required. We have had them in flower twenty-one days from the time they were taken in, with strong spikes, making a grand display under the above treatment.—BRAMLEY.

— MEALY BUG ON VINES.—The following is one of the best mixtures I have seen used to remove mealy bug from Vines:—3 pints of sweet oil to 1 pint of petroleum, thoroughly mixed, and put on with a brush.—GEORGE TABER, *Rivenhall, Essex*.

— GOLDEN WEDDING OF DR. AND MRS. PATTERSON.—Many readers will join us in our congratulations to Dr. and Mrs. Patterson, of Bridge of Allan, who celebrated their golden wedding on the 25th ult.

— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We have great pleasure in announcing that Baron Schröder has kindly consented to preside at the fifty-fourth annual Festival Dinner at the Hôtel Métropole, on the 22nd of June next, in aid of the funds of the above Institution.

— ENGLISH GRAPES IN NEW YORK.—A few weeks since it was announced that English Black Hamburg Grapes were selling freely in America at remunerative prices. Now, according to the "Garden and Forest," Gros Colman Grapes imported from England are realising 8s. per lb. in New York.

— REPORT OF WEATHER DURING JANUARY, 1893.—The past month has again shown us how very fickle is our climate. January began with exceptional severe frost; on the morning of the 5th 25° were registered on the ground, whilst the month ended with weather of a very mild character. Rain and snow fell upon seventeen days during the month. Maximum in any twenty-four hours was 0·39 on the 28th; minimum in any twenty-four hours was 0·01 on the 24th. Total during the whole month, 1·67, against 0·64 of 1892.—E. WALLIS, *The Gardens, Hamels Park, Buntingford, Herts*.

— AGAVE RIGIDA.—At the meeting of the Royal Botanic Society on Saturday, 28th ult., Mr. Granville R. Ryder in the chair, there was shown from the Society's Gardens a plant of the Sisal Hemp, *Agave rigida*, now extensively grown in the Bahamas and Central America for its fibre. The Secretary said that until lately, with the exception of two or three fibre plants, as Hemp and Cotton, commerce depended upon wild plants for its supplies; but so great was the demand now for fibres for papermaking and other uses, that it had been found necessary to grow them specially. He believed that the plants producing the Bowstring Hemps, or Sanseveiras, would be found also well adapted, owing to their manner of growth from rhizomes spreading along the ground, making them easy of propagation and cultivation.

— MARGARET CARNATIONS.—Calling to-day at the Sparkhill Nurseries I found Mr. Herbert cutting down his seedling Margaret Carnations preparatory to their breaking for cuttings, and I enclose you two very small lateral blooms of one of them to give you an idea of the strong Clove perfume they have. They are from a plant which has been in bloom since August from seed sown in February last. You will see at once that even this variety is a great improvement on the ordinary Margaret Pink, and is, as I have said in previous communications through the *Journal*, the result of a cross between a Margaret Pink and a crimson bizarre Carnation, Robert Houlgrave.—W. DEAN, *Birmingham*. [The blooms sent show a great advance on any Margaret Pinks we have seen. The colour is deep crimson, petals broad, only slightly serrated, and the perfume delicious; an acquisition worthy of a good name.]

— NARCISSI FROM THE SCILLY ISLES.—Three years ago the farmers in Scilly were beginning to appreciate the necessity for getting their Narcissus flowers on the market as early in the year as possible, and to endeavour to secure that end by forcing. The first attempts were rude and experimental; but the farmers have been apt pupils, and the forcing process has now developed into something like a fine art. In the old days the half-opened blooms were plucked, and then plunged into hot water, or into the family oven, to open. The next development was the introduction of tanks, where the flowers were forced by steam. Now, however, these clumsy contrivances have given place to forcing houses of glass. The bulbs are placed in boxes, and at a certain stage are put into the forcing house, where, under the influence of a constant and carefully graduated heat, the buds come up and open with surprising quickness. Everyone who can afford it builds a forcing house, and the ambition of those who have one is to speculate in more. The bulbs do not retain their strength under this treatment, and are usually unfit for use a second year; but a few thousand bulbs, more or less, are of little consequence nowadays. The present season has opened well, and large consignments are being despatched every week to the London and midland markets.



— MANURES FOR ORCHARDS.—Most of the successful attempts to renovate old Apple orchards have required large amounts both of mineral and stable manures. It is likely that the latter was mainly efficient in keeping the soil open and supplied with carbonic acid gas, and thus preventing the mineral manure becoming insoluble. When vegetable matter is deficient the tree roots cannot get the benefit of the mineral fertility that the soil contains. Old orchards often suffer thus, and are made productive again by supplies of stable manure that has itself very little mineral matter, but makes available what the soil already contains. There need be no fear of making the soil around large trees in full bearing too rich. If young orchard trees are fertilised or cultivated too highly they will run to wood; but in older trees this extra supply of nutriment will, if the trees be properly pruned, be turned to the production of a richer and better flavoured fruit than the larger specimens which very young trees occasionally produce.—(*American Cultivator*.)

— UNCERTAINTY OF BROCCOLI.—It is some years now since I last grew Snow's Winter White Broccoli. The heads were small, very uneven in form, and they used to "turn in" generally two months after the stated time. I tried seed from several sources, but all turned out the same. Some may say the seed was sown at the wrong time or the cultivation was wrong. I generally sow the seed of all Broccoli from the middle to the end of March, but in the case of Snow's a part of it was sown a month later as well, the result was just the same. So I gave it up the moment I found a superior substitute in Sutton's Mammoth White. For our land we cannot find another sort equal to this for giving us clear white good sized heads during January and February. Even this variety shows how variable the "turning in" of varieties are in different seasons. Michaelmas White, which is one of our best early Broccolis, was fit for use fully six weeks before its proper time, and the same might be said of some other sorts. Therefore it is not wise to discard a variety for one year's trial, but in my case I grew "Snow's" at least eight seasons and never had really good results from it.—E. M.

— WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—A meeting of the above Society was held in the Mechanics' Institute, Mr. T. Davies, Wavertree Nursery, presiding. The prize essay on "Mushroom Culture," by Mr. Wm. Disley, was read, and provoked considerable discussion, so much that the paper by Mr. R. G. Waterman on "Soils and their Treatment," had to be postponed for some future date. At the close of the meeting an interesting event took place, viz., the presentation to Mr. H. Corlett, The Gardens, Woolton Wood, of the beautiful silver medal given by the proprietor of the *Journal of Horticulture* for the best paper on the "Principles of Heating." In presenting it the Chairman made a most suitable speech for the occasion, which was replied to by the recipient of the medal. In submitting their fourth annual report the Committee had to record a successful year's work. All the papers read have been of a practical description, that by E. G. Baillie, Esq., of Chester on "Vegetarianism" giving unqualified pleasure. The lectures on "The Geographical Distribution of Plants," by R. J. Harvey Gibson, Esq., M.A., proved most successful, giving as they did useful and valuable information to the gardener and all lovers of horticulture. Dr. T. L. Bailey's course on "The Chemistry of Soils and Manures" would undoubtedly prove of considerable benefit to the cultivator, and it is to be hoped that the subject may be continued next session.

— WHAT IS THE TRUE SHAMROCK?—Most Irishmen are probably of opinion that they can answer the question correctly, but unfortunately they do not all give the same reply. Mr. Nathaniel Colgan, who has been investigating the subject, collected thirteen specimens from the following eleven counties—Derry, Antrim, Armagh, Mayo, Clare, Cork, Wexford, Wicklow, Carlow, Queen's County, and Roscommon. Shamrocks were thus secured from northern, southern, eastern, western, and central Ireland, Mr. Colgan's correspondents in the various counties taking pains to have each sample selected by a native of experience who professed to know the genuine plant. All the specimens were planted and carefully labelled with their places of origin, and flowering within some two months later gave the following results. Eight of the specimens turned out to be *Trifolium minus* of Smith, and the remaining five *Trifolium repens* of Linnæus. Cork, Derry, Wicklow, Queen's County, Clare, and Wexford declared for *Trifolium minus*; Mayo, Antrim, and Roscommon for *Trifolium repens*; and Armagh and Carlow, each of which had sent two specimens, were divided on the question, one district in each county giving *T. repens*, while the other gave *T. minus*. These results are set forth by Mr. Colgan in an interesting paper in the first volume of the "Irish Naturalist."

Elsewhere in the same volume Mr. R. L. Praeger suggests that authentic specimens of Shamrock should be obtained from every county in Ireland, and he adds that he has no doubt Mr. F. W. Moore would gladly grow them at Glasnevin Gardens, if Mr. Colgan did not care to undertake so large an order. Mr. Praeger notes that in his own district, North Down, *Trifolium minus* is always regarded as the true Shamrock, but that a luxuriant specimen, or one in flower, is generally discarded as an impostor.—(*Nature*.)

— BROCCOLI.—It would be very interesting to learn what has been general experience this winter in relation to the effect of the recent severe weather upon Broccoli plants grown in ordinary loose soil, and in that which has not been dug for two or three years, and is in consequence very firm if not hard. I observed in several gardens last summer that old Strawberry beds from which the plants had been cleared off, but had not been dug or otherwise disturbed, had been planted with Broccoli plants with the avowed object of having them of a very hardy nature. I should now very much like to know whether, as complaints are made already of the harm done by the recent frost, the plants on such hard soils are uninjured. If they have come out of the hard weather in much better condition than have plants on soft summer-dug ground, then much is gained. If they have not, then nothing would seem to be gained. Then it would be interesting to learn whether early or late kinds have so far wintered best. It may be assumed that the early section, if not actually tenderer than are the late sorts, is at least in a far more active condition of growth in midwinter, hence much more likely for that reason to suffer from severe frost. Without doubt Broccolis have suffered greatly during the past severe winters, and the suggestion of "W. S." (page 70) that all the early section be lifted and laid in either houses or pits is one that merits every consideration. It is useless to plant in the summer if breadths be left, only to be killed by frosts in the winter.—INQUIRER.

— TROPICAL VEGETATION.—An American professor, Mr. D. H. Campbell, gives in the *Botanical Gazette* a very vivid description of the flora of the Hawaiian Islands. The first thing which struck him on reaching Honolulu was the brilliant colouring of the tropical vegetation. All possible tints and shades and varieties of green were seen in the bay and on the mountain slopes—"a real symphony in green." Palms are, of course, the most prominent feature of the landscape. The Royal Palm, "with its smooth columnar trunk, looking as if it had been turned, encircled with regular ring-shaped leaf-scars, and its crown of plummy green leaves," is the grandest of all. Then come the Betel Palm, which yields the Areca Nut and the strongly perfumed cachou; the Wine Palm, the sweet sap of which gives wine after fermentation; the elegant Cocoa Palm, the Sugar Palm, and a great variety of Fan Palms. Another characteristic feature is the great number of leguminous trees. In our climate we chiefly know herbs and some vegetables belonging to this tribe, or a few shrubs (the Furze and the Broom), and very few trees (like the Acacia tree and the Judas tree), but in Honolulu leguminous trees are plentiful, and beautiful too. In the whole vegetable kingdom, we are told, there is no more splendid plant than the *Poinciana regia*, one of this tribe: "A spreading flat-topped tree, perhaps 30 feet high, with feathery green foliage and immense clusters of big, flaming scarlet flowers which almost hide the leaves, so that the tree looks like an immense bouquet." Another tree of the same family droops great bunches of golden yellow flowers and cylindrical pods 3 to 4 feet long, and close by it stands the graceful Algaroba, with fine feathery leaves and sweetish yellow pods of which animals are fond. Mingled with these are many species of Musa, or Banana plants, and a luxurious variety of showy flowering shrubs.

#### FUNCTIONS OF VINE LEAVES.

I HAVE no intention of reopening this discussion, because enough has been advanced on both sides to enable the numerous readers of the *Journal* to form a definite opinion on the subject; and even if additional arguments on my part were required they are in perfect readiness at 171, Fleet Street.

Nor do I intend to cavil with Mr. Iggulden for his extremely acute assumption that Mr. W. Baidney's well-reasoned contribution (page 525, last vol.) can be considered to have wholly supported him. What I want to draw attention to is the following remarkable sentence on page 89:—"There is no sense whatever in permitting Vines to expend their superfluous energies in the formation of foliage or wood that only interferes with their other functions." I do not remember having seen such a practice advocated at any time, certainly I have never advanced it; but I have repeatedly advocated, and still believe in, the value of practising extension and freedom of growth as a means of creating and sustaining vigour, fruitfulness, and permanent health. In this there is sound sense and logical reason.—H. DENKIN.



## CANKER IN FRUIT TREES.

(Continued from page 99.)

THE engravings fig. 23, *A* to *I*, are elucidatory of the article on this subject on page 27. In *A* is represented canker as a disease of fungoid origin, and not produced by any predisposing cause, or only indirectly by defects of cultural requirements or composition of the soil. The wounds are occupied in such cases around their circumference, or some part of it, by the mycelial threads or spawn of the fungus, *Nectria ditissima*, are swollen, fissured and scaly, and have an unsightly appearance. One such tree in a garden or orchard is sufficient to infect a parish, for the spores of the fungus are thrown off in countless

year nor in two or more, but the tree affected dies "hard," and as speedily recovers when "managed," which clearly indicates gangrene due to ill-nutrition. This cankerous affection is common in orchard trees which are so thickly branched and poverty stricken as to produce fruit little larger and almost as sour as crabs. A few doses of Mr. Tonks' mixture, 12 lbs. dissolved bones, 10 lbs. of powdered saltpetre, 4 lbs. of common salt, 2 lbs. of Epsom salts, 1 lb. of ground green vitriol, and 8 lbs. of ground gypsum, mixed, and applied at the rate of  $\frac{1}{4}$  lb. per square yard over the whole extent of soil within reach of the roots early in spring, repeating when the fruit is formed, would make such cankerous trees assume a different garb, and the wounds instead of gaping wide to receive every foul infection would soon be closed by new bark, an



FIG. 23.—APPLE TREES INFESTED WITH CANKER.

numbers, and they germinate under favouring climatic conditions. If the spores effect a lodgment on an Apple or Pear tree, and the bark is defective, it pushes its germinal tube into the inner bark and causes the destruction of the small twig (if such be assailed) in the year of attack, or in a larger branch produces a considerable excrescence and enlargement of the wound. Its cure is indicated in the figures *C*, *D* and *F*.

In *B* is seen a different kind of wound, not caused or occupied by fungal growths, but those caused by bruises, inimical climatic conditions, the burrowings of larvæ, and defects of soil—its staple, water-logged, or its composition. The wounds are shown in their healing state—the defects pointed out on page 28 having been rectified and the tree nourished, so that instead of having the bark round the wounds somewhat ragged, fissured, and scaly, as in *H*, they are in process of being covered over with clean healthy bark, as shown in *I*, otherwise this dry gangrene has some resemblance to canker caused by fungus. It, however, never becomes more than warted around the circumference of the wound, seldom is marked by excrescences larger than those produced by American blight or woolly aphis, and it does not kill small twigs in a

instance of which is shown in the white rings around those in the tree *B*. All this form of canker wants is "management."

The following are the particulars referring to the illustrations:—Apple tree (*A*) with canker caused by fungus (*Nectria ditissima*), and Apple tree (*B*) without fungal growths in the cankerous wounds. "*A*" tree references—*a*, canker caused by fungus in the stem; *b*, canker killing small branch in the year of attack; *c*, branch a year after being killed by the fungus; *d*, branch not entirely girdled; *e*, unattacked branches. "*B*" tree references—*f*, cankerous wounds (due to dry gangrene) on stem; *g*, wounds on the branches—all without fungus. Wound references—*C*, canker wound before cutting out the fungus; *D*, wound after the canker fungus (mycelial threads) has been cut out; *E*, result of imperfect operation, the fungus being left in the tree; *F*, successful operation, the fungal growths being excised, and new bark forming over the wound; *G*, fungus established, canker well developed—i.e., *C*, two years later; *H*, wound without fungus growing in the inner bark around it; *I*, wound without fungus healing over. *Bar*, point of heading. *A*, a fungus-infested tree for regrafting.

Reverting to Mr. Kruse's case, an analysis of the soil is given



(page 564, last vol.), its management as regards manure clearly set forth, and the results in the health (and that means profitable production) of the fruit trees well defined. What more does anyone want to know? Everyone undertaking to grow fruit for profit should know what the land—the raw material out of which fruit is intended to be manufactured—contains. If the analysis is satisfactory, then we must look to the mechanical nature of the soil. If there is a plough pan or a pan within 2 feet of the surface that land will not grow Apples, Cherries, and Pears on free stocks satisfactorily; but “Plums, Gooseberries, and Black and Red Currants do well,” because they are surface rooting, and have many more fibres than Apples, Cherries, and Pears on free stocks, which to obtain the food their massive heads require must have a soil their roots can penetrate freely and deeply. A soil with a pan within 2 feet of the surface will need trenching and the bottom loosened, and drains will be necessary. These things are generally neglected, and the outcry is the trees canker and gum when they should be coming to full profit. Apples on Paradise, Cherries on Mahaleb, Pears on Quince, or double-grafted (with Plums, Gooseberries, and Currants) should only be attempted on such soil, for it is not naturally fitted for any other.

Draining does much to correct the evils of a pan, if the drains are deep enough to draw the water away, and let the sun, air, and rain into the soil and through the pan. Clays are the same; all soils may be made to grow anything the climate is fitted to produce, but the cultivator must decide whether it will pay or not. If the soil is naturally of a porous nature, but retentive enough for the due conservation of moisture and the economy of manures, 3 or more feet deep, and not below that surcharged with water, but naturally well drained, yet not excessively so, that will cost next to nothing in preparation, and it will give the best returns for the cultures, whatever they may be.—G. ABBEY.

(To be continued.)

## DISCUSSION ON POTATOES.

### QUALITY IN POTATOES.

WHAT a pity it is that Magnum Bonum is not of better flavour. It would be difficult to obtain a Potato equal to this for cropping, withstanding disease, and keeping plump and fresh over so long a season. Grown here, in our strong land, Magnum Bonum is almost devoid of that nutty flavour so much appreciated. Windsor Castle will, in my opinion, supersede this old favourite when it becomes better known. One hears much about The Bruce and the Dunbar Magnum Bonums, as well as Dunbar Regents. I presume, though, that these two varieties are simply grown at Dunbar, and differ in no other way from the ordinary strain. If tubers were sent from Cornwall to Dunbar, and grown there, they would, I suppose, be called by that name also; hence a confusion of names takes place. Many persons in this neighbourhood who grow Potatoes for market, some on lighter soils than this, have tried The Bruce, which is, I suppose, a form of Magnum Bonum, but it does not meet with much favour.

One of the best flavoured Potatoes that I have tasted was the old Scotch Rocks. Two points they possessed which were not favourable to the retention of this sort—deep eyes and yellow flesh. Many ladies, I find, think far more about the appearance of the Potatoes than their flavour; therefore, if a variety is mealy and white, it is considered superior to one with a tinge of yellow in it. Before coming south I used to buy Potatoes in the Liverpool market direct from the ship. They were of German growth I believe, of kidney shape, and most excellent in quality and appearance; 7s. 6d. was the price paid per bushel, which is slightly different to that charged in these days, when quantities can be bought for 1s. 3d. per bushel.—E. MOLYNEUX, *Swanmore Park, Bishops Waltham.*

### STORING POTATO SETS.

A GOOD deal of the success or failure of a Potato crop depends on the method of selecting and storing the sets. In too many cases we see the sets taken in the spring from a pit where they have been kept all the winter, covered with long weakly growths which have to be rubbed off before they can be planted. That the growth of the plant must be weakened by the loss of energy in the set is apparent. The best time to select the sets is when the crop is being harvested, and in my opinion those that give the best returns are undersized tubers of good shape, which can be planted whole. After being well dried by exposure to sun and wind they should be taken to a cold structure where frost can be excluded during winter, and spread out thinly. When a spell of bad weather occurs and outside work is at a standstill they may be examined, all showing signs of disease being taken out, and the rest packed closely together on shelves.

To facilitate work in spring it is a good plan to have shallow boxes made for the sets, so that being portable they can be taken to where the planting is being proceeded with. These boxes can be made to fit one above another, thus economising space by having square pieces of wood 8 inches high nailed to the corners, on the top of which another box can rest. Treated thus the sets are bristling with sturdy young growths at planting time, and they can be kept from making undue growth till well into the spring. I think late planting for main crops is advisable, as the soil being in better condition, and the weather warmer, they start unchecked, reducing the chances of blanks to a minimum.—O. C.



### WINDSOR, ETON AND DISTRICT CHRYSANTHEMUM SOCIETY.

WE are informed that the Committee of the above Society have fixed the date of their second annual Exhibition, to be held at the Albert Institute, Windsor, for November 10th, 1893.

### FAVERSHAM CHRYSANTHEMUM SOCIETY.

THIS comparatively young Society is fast making headway in the district. The Committee announce their Show for this year to take place on the 15th and 16th November, and are sending out details of a new venture somewhat on the lines of the N.C.S. challenge shield. It is to be called the Kent County competition, and is open to all Chrysanthemum and horticultural associations in the county of Kent. The class is for thirty-six blooms, to consist of twelve distinct flowers of each of the following varieties:—Incurved, Japanese, and Reflexed. Kent is noted for some of our best growers, and in the Faversham district we have seen very fine specimens of the reflexed class; still we are inclined to think that if the new class had been for, say, eighteen incurved and eighteen Japs, a more attractive display might be expected. The prizes are good, and Mr. C. E. Clinch of 3, St. Ann's Road, Faversham, is the Hon. Sec.

### THE N.C.S.—“SLIPS”—MR. GODFREY'S LETTER—TORTIOUS.

MAY I venture to put you right on one point, and you have several times made the same slip in the course of this correspondence. You speak of Mr. Godfrey's letter being in the hands of the Treasurer. I presume you mean Mr. Ballantine, who is Chairman of Committee. The Treasurer is Mr. Starling, and nothing short of a row about the reserve fund would draw him into print. I notice in my letter (page 97) your printer's devil does not know how to spell “tortious,” he is evidently not a lawyer.—G. S. A.

[We desire to have all our “slips” corrected. It was not Mr. Starling, the Treasurer, but Mr. Ballantine, the Chairman of Committee, who was pleased to have Mr. Godfrey's letter, and he very clearly intimated that it would be better to inquire into the subject at issue without the publication of the letter. In this we concurred, and on the understanding that the inquiry would be as frank and fair as the majority of the members of the N.C.S. would naturally wish, the matter was left in his hands.

Mr. Godfrey still rests under the reproach of making an untruthful statement respecting a member of the Floral Committee. If a genuine investigation had proved that Mr. Godfrey had no reasonable grounds for his statements we should have expressed our strong disapproval of his conduct, and apologised for having been made the medium in placing the matter in the hands of the Chairman of the N.C.S.

We cannot do anything of the kind at present, as, confessedly, there has been no real investigation; on the contrary, there appears to have been a tacit shielding of one of the parties in the case, and if the Chairman has no objection we will publish what he said on a matter that evidently influenced him in this connection.

In respect to the word “tortious,” our P.D. is “not a lawyer,” and we doubt if he will become a good one as taught by this discussion. The peculiar use of the word “libel,” which, like the sword of Damocles, has been held aloft, has not, however, frightened him, and he thinks “tortuous” (crooked or twisted) not an inappropriate term in this reference, though “tortious” (injurious, wrongful) ought to have appeared on the page cited by “G. S. A.” The case of *Godfrey and another* will never be settled satisfactorily until the verdict goes forth that the complainant had or had not reasonable grounds for his allegations. That is the point, and we have no wish to publish anything beyond it.]

### INCREASED SIZE OF STANDS.

I DO not think “D.” (page 76) read my previous note carefully. In my remarks anent the increase in the size of the stands I distinctly say, “Let it be optional and with a provision as to the limit of the extension.” Nothing could be plainer than this. Will “D.” explain where it has already been so conclusively shown that there is no need whatever for the increased size of the stands? If I mistake not he was one of the first to agitate for the increase that he now seeks to condemn. I think he will find when the audits appear that the large varieties were still conspicuous on the exhibition table.

There may be a slight alteration in the figures of some, but that is more owing to inability to produce them, consequent on an untoward season, than anything else. It will be many years before varieties like Vivand Morel, Etoile de Lyon, Boule d'Or, and Stanstead White are relegated to the rubbish heap, or even from the exhibition room, in favour of those of more refinement as suggested by “D.” Could he name one possessing more of the latter quality than a well developed bloom of the first named? This is one of the giants as I understand them.

I fear Mr. Brown (page 76) also does not grasp the real advantage of an increase in the size of the stands. The object in having more space is to reveal the defects in the bloom, if there be any, so that each exhibitor may have justice done to them. Does Mr. Brown uphold the



principles of small stands, because, as he states, where the blooms are packed together such defects are hidden? Surely this would not be justice to another competitor who had perhaps his whole collection without a fault, even though they were so closely packed on the stand as not to allow an opportunity of looking for defects. Neither would it be right to permit these opportunities to hide defects to pass by without any attempt to alter the method of staging.

If one exhibitor can properly fill a larger stand, is it fair to compel him to stage his blooms on a stand much too small for them? Surely not. Again, if another exhibitor cannot well fill an ordinary stand, why should he be compelled to employ a large one, simply because some few think an "absolute rule" is necessary? This dictum of Mr. Brown is not in accord with the convenience that committees are able to allow in their staging arrangements. But if my plan were adopted, there need be no complaints from persons who wished—and could well fill larger stands, both to the credit of themselves, advantage to the judges, and a greater attraction to visitors. Those who are content to cultivate medium-sized blooms, perhaps of small varieties, would not be compelled to employ stands much too large for their productions.

I was not aware that judges had any antipathy to the green boards showing between the flowers. I was a listener to a reprimand which the judges received during the late season at a show, because they had awarded the first prize to blooms which were upon a stand of increased size (where the green board was visible in many places), in preference to the blooms on an ordinary sized stand which was quite covered, and indeed many of the flowers overlapped each other, thus hiding defects. Surely this is not in support of Mr. Brown's argument. The first prize stand in the exhibition alluded to was looked upon as a splendid "object lesson," one certainly that was more creditable to the exhibitor than any other, and acknowledged as such by exhibitors present. If I mistake not, the person in question would require much persuasion to go back to the orthodox stand, even in spite of the antipathy of judges to green paint.—SADOC.

WE outside members of the National Chrysanthemum Society must expect little, I think, from past experience. Starting with a conference upon the increased size of show boards, and after a majority decides in favour of such, the proposition is deliberately cast aside without further appealing to its members. I never heard of any other than the N.C.S. ignoring the decision of a majority of its members before. Perhaps Mr. Jameson, who claims to be the chief mover in the matter, will again revive the subject. Had the N.C.S. adopted the plan I advised—*i.e.*, send to each member and each affiliated society, they would have obtained the opinion of all those the subject most concerns, then they would have had no fear whether they were going to lose support or not.—J. D.

#### PROFITABLE CHRYSANTHEMUM GROWING.

THE list of profitable varieties might of course be greatly extended, but I should say few trade growers will find much difficulty in adding most of those mentioned by Mr. Pithers (page 54). Of the number I had intended to include President Hyde, but by some oversight I had omitted it. It is one of the best yellows for the purpose named. Massalia, which is also named by your correspondent, is evidently a gem of the first water, and his description of its charm is sufficient to make the average market grower's eyes sparkle. About Gloire de Rocher I am not so sanguine. Mr. Pithers would seem to imply that its resemblance to Val d'Andorre is a recommendation, but from the market grower's point of view I do not think it is. Val d'Andorre has been tried by every market man I know, and the result was invariably the same, that is, it had to be discarded after the first season. I am disposed to think that Chrysanthemums of this type have been carefully weighed in the balance and decidedly found wanting in the qualities that go to make saleable cut blooms for market.

I am inclined to agree with your correspondent's statement about the superiority of Madame Louise Leroy over Elaine, and I have little doubt that most market growers favour this view. The former variety can be kept longer than Elaine without getting faded, besides several other good points, but the grower is not exactly a free agent in the matter. Elaine has held so long the position of leading market white that it is difficult to supersede it. Our returns for this season show that Elaine still secures better prices than the other, and I do not think our experience is other than general. That being the case, the market grower has no alternative than to grow it in quantity. Madame Louise Leroy may eventually supersede Elaine, but the process will take time; meanwhile I incline to the idea that there is ample inducement to grow both Chrysanthemums for saleable purposes.—ENFIELDIAN.

#### WHAT CONSTITUTES AN AMATEUR.

THE true definition of an amateur has long been a debateable point in horticultural matters. If we put any faith in a good English dictionary something is to be learnt there about the much-vexed question of what is an amateur. In my copy an amateur is described as a person "who cultivates any study or art from taste or attachment, without pursuing it professionally." Now, I take it that the latter term means anything gained monetarily by professionalism. My idea of an amateur is a person who cultivates any kind of horticultural produce merely for the love of the object, whatever he takes in hand, and not for gain in any way, and one who does not receive assistance from a professional in its cultivation.

Acting in the capacity of Secretary to a rural horticultural Society, where the amateur element is rather strong, I have ample opportunities of ascertaining the methods adopted by this class of cultivators. I find that the wording of the definition of an amateur as employed in our Society seems to meet all cases here. It is thus: "Persons who neither follow the business of a gardener, nor habitually employ a paid gardener in their service solely to attend to their garden, nor are dealers in horticultural produce." Worded thus a clergyman, doctor, schoolmaster, or an ordinary farm labourer for the matter of that, would all be eligible to compete for prizes, and would not be debarred from employing a casual labourer to dig the garden, for instance, at any time.

In my opinion it is difficult to get a better solution of the term than somewhat on the lines here indicated. I have never been in harmony with those who consider that my lord, or duke somebody's gardener is an amateur because he can compete as such at any exhibition of the Royal Horticultural Society. The proposition seems absurd.—E. MOLYNEUX.

#### GRAPES AT FLOORS CASTLE.

I WAS very pleased to see in your issue of January 12th an illustration of the Grape room at Floors Castle Gardens. One point that struck me was the apparently fine berries—if one can judge by a photograph—and considering that the Vines must be now over thirty years old they sustain their vigour well, as I suppose they are those planted by Mr. Rose. It is near thirty years since the writer made the acquaintance of Floors as a young man, and the Vines were then at their best, being about four years old. Three span-roofed houses—one devoted to Muscats, the others to Black Hamburgs, and the third made up of late kinds—were as fine as could be seen anywhere. But although these houses were so fine for general crops there was an early house at Floors at that time that was as unsuccessful. It was a lean-to beside the Pine stove, and the Vines always broke prematurely, and I did not see a decent crop on them. I have never had any difficulty with an early house, and never saw such a capricious case. Some special local influence must have been the cause of this irregularity.

This just reminds me of a little incident regarding Muscat Grapes. One of the still-room maids at Floors once said to me respecting fruit in the Castle, "I wonder how it is that the Muscat Grapes from Broxmouth—the Duke's other place in East Lothian—won't keep, when those grown at Floors would hang till they shrivelled?" But this will break the ice on another subject perhaps, as it may lead to a dispute that arose as to the Broxmouth fruit being Muscats at all, and a bunch was sent to your office to decide. It will be about thirty years ago, though I cannot recollect to a year. When cuttings of these "Muscats" were proved, the matter, I believe, was not disputed, but that the difference in the character of the fruit was from a local source.

I was also pleased to see Mr. Barnes' note in your issue of the 26th ult., to know the exact place where the Grapes are kept, as he may well understand that a young man who was in the bothy nearly three years will know its whereabouts. The bottling system, of course, was comparatively unknown thirty years ago, and there is a very great change in the money value of Grapes then as compared with now. I have seen very good Muscat Grapes hanging on the Vines in March at Floors; they were a little shrivelled certainly, but they were good in colour, and certainly fine fruit.—M.

#### GARDENERS' ORPHAN FUND.

THE fifth annual general meeting of the subscribers to the Gardeners' Orphan Fund was held at the Cannon Street Hotel on Friday, February 3rd. In the unavoidable absence of Sir Julian Goldsmid, Bart., M.P., the President of the Fund, Dr. M. T. Masters, F.R.S., presided. There was but a small attendance, doubtless owing to the thick black fog which prevailed at the time. After reading the minutes of the previous meeting, the Hon. Secretary produced the Executive Committee's annual report and financial statement, which were unanimously adopted, as follows:—

##### ANNUAL REPORT AND FINANCIAL STATEMENT.

The Executive Committee have great pleasure in presenting their fifth report, and in congratulating the subscribers to the Gardeners' Orphan Fund on the closing of another successful financial year, and the continued prosperity of the charity.

The claims of the Fund having been brought under the notice of Her Royal Highness the Princess of Wales, the Committee have the honour to announce that Her Royal Highness has been graciously pleased to become patroness of the Fund, and has expressed the hope that "the fact of her name appearing as patroness may assist the objects of the charity." Such exalted patronage being extended to the Fund is most gratifying to the Committee, and will be of the greatest value and importance in the promotion and furtherance of the cause.

The munificent donation of £500 from Mr. and Mrs. Harry J. Veitch, as a thank offering on the celebration of their silver wedding, was an act of generosity unexampled in the history of gardening charities, and the warmest thanks of all concerned in the welfare of the Fund are due to them.

The Committee are under deep obligation to Sir James Whitehead, Bart., M.P., for his great kindness in presiding at the annual dinner at the Hotel Métropole (which was a new departure in the management of the Fund), and whose eloquent appeal for support resulted in the sum



of nearly £1000 being received on that occasion. The Committee hereby tender him a most cordial vote of thanks.

During the past year fifty children have been receiving the benefits of the Fund, and the Committee recommend that eight be elected this day, bringing the roll up to fifty-eight. Two of the orphans on the list—viz., Victor Spyers and Ralph Joseph Gardiner—having attained the age of fourteen years, are no longer chargeable to the Fund. See Rule XIII.

The Committee again take advantage of the presentation of their annual report to tender their most sincere thanks to the many kind friends throughout the country for efficient help rendered in many ways, but whose names it would be invidious to mention.

A slight falling off occurs in the annual subscriptions, which is to be regretted, as this should form the chief source of income. The Committee appeal strongly for increased efforts in obtaining new subscribers and more earnest support from the gardening community generally, in whose interests the Fund was established and is maintained.

The Committee have to lament the death during the year of Mr. C. H. Sharman, one of their most zealous and active colleagues, who took a very warm interest in the Fund from its commencement. The Committee have elected Mr. Robert Ballantine, as a member of their body, in the place rendered vacant by the death of Mr. Sharman.

The members of the Committee who retire by rotation are Messrs. Head, Laing, Nicholson, Poupart, Smith, Walker, and Turner, who, being eligible, offer themselves for re-election. The retiring Auditor, Mr. John Fraser; the Treasurer, Mr. T. B. Haywood; and the Hon. Secretary, Mr. A. F. Barron, are nominated by the Committee for re-election.

#### GARDENERS' ORPHAN FUND.

##### CASH STATEMENT FOR THE YEAR ENDING DECEMBER 31st, 1892.

###### RECEIPTS.

	£	s.	d.	£	s.	d.
To balance from last account .. .. .	629	19	1			
„ On deposit with bankers .. .. .	600	0	0	1229	19	1
„ Subscriptions, general .. .. .	347	6	0			
„ „ collected by local secs. .. .. .	112	19	0	460	5	0
„ Donations, general .. .. .	174	5	3			
„ „ collected by local secs. .. .. .	120	4	0	294	9	3
„ Silver wedding, thank-offering from Mr. and Mrs. Harry J. Veitch .. .. .				500	0	0
„ Annual dinner .. .. .				993	4	10
„ General card collection .. .. .				134	3	1
„ Advertisements in list of subscribers .. .. .				31	16	0
„ Collections in boxes (general) .. .. .				17	17	6
„ Dividends on stock and interest on deposit .. .. .				143	17	7
				£3810	12	4

###### NOTE.—Investments, &c.

Two and Three-quarter per Cent. Consols .. .. .	6070	6	10
Three per Cent. Canadian Stock .. .. .	500	0	0
	6570	6	10
On deposit with bankers .. .. .	300	0	0
	£6870	6	10

###### EXPENDITURE.

	£	s.	d.	£	s.	d.
By allowances to orphans .. .. .				625	17	6
„ General card collection .. .. .				43	5	8
„ Annual dinner .. .. .				167	10	2
„ Printing, &c., lists of subscribers .. .. .				26	13	0
„ Secretary's clerk .. .. .	52	10	0			
„ Printing and stationery .. .. .	21	1	8			
„ Annual General, and Committee meetings .. .. .	6	19	0			
„ Postages .. .. .	18	9	0			
„ Bank charges .. .. .	2	15	9			
„ Sundry expenses (petty cash) .. .. .	32	14	3	134	9	8
„ Purchase of £10 0 2½ per Cent. Stock .. .. .	960	0	6			
„ „ £500 2½ per Cent. Stock .. .. .	485	13	0			
„ „ £514 2s. 3d. 2½ per Cent. Stock .. .. .	500	0	0	1945	13	6
„ On deposit with bankers .. .. .				300	0	0
„ Balance at bank .. .. .				567	2	10
				£3810	12	4

We have examined the securities, and examined the books and vouchers supplied to us, we certify the above account to be correct.

(Signed)

JOHN FRASER, *Leyton,*

WM. SHARP, *Chartered Accountant, 60, Gresham Street, E.C.* } *Auditors.*

Dated January 13th, 1893.

Dr. Masters, previous to the adoption of the report and financial statement, remarked that there were one or two points that called for comment. First it was the small attendance, but that might be taken as a guarantee of the good faith subscribers have in the Executive. Another point was the fact that H.R.H. the Princess of Wales had consented to become Patroness of the Fund, which could but do good to the organisation. It was also a matter of gratification to know that Mr. and Mrs. H. J. Veitch had subscribed so liberally to the Fund, as a thank-offering for the celebration of their silver wedding. He noticed, however, that according to the report there was a slight falling off in the subscriptions, which was a matter for regret and not creditable to gardeners.

The retiring members of the Committee, as mentioned in the report, were unanimously re-elected, as likewise were Mr. T. B. Haywood as Treasurer, Mr. A. F. Barron as Honorary Secretary, and Mr. J. Fraser,

Leyton, as Auditor, with Mr. W. Sharpe, Chartered Accountant. It was also proposed by Mr. J. Wright that Sir James Whitehead, Bart., M.P., and Sir Edwin Saunders be elected Vice-Presidents of the Fund. This proposition was unanimously adopted.

Messrs. R. Dean, Poupart, J. Weeks, and B. Wynne were then appointed Scrutineers for the poll for the election of eight candidates for the benefits of the Fund. The poll closed at four o'clock, when the following results were announced, those with an asterisk affixed to their names being elected:—\*Ada Beddoe, 228; Winnifred Helen Doherty, 59; \*Nellie Ede, 254; Robert Houston, 185; John Keates, 52; Alice Maud Milne, 81; \*Minnie Rapley, 195; John Titley, 114; Rosa Emily King Ward, 143; Robert Clement Blake, 154; \*Otto Kosbab, 217; \*John Mitchell, 227; \*Emily Kate Neve, 220; \*Frederick Price, 445; \*Philip Arthur Stevens, 216.

In the evening, and at the same hotel, the members of the Committee and a few friends had a friendly dinner, Mr. W. Marshall presiding.

#### EXPERIENCE IN HEATING.

TAKING Mr. Craven's article (page 87) as a whole it must prove instructive to those who have had but little experience of the subject. It is not to be expected, however, that even all Mr. Craven has to say upon the question will be universally acknowledged as correct and conclusive. The subject of heating horticultural structures by the aid of hot water is a wide one and one that contains considerable range for debate. The remarks made by Mr. Craven at the commencement relating to the density of cold water over that which is warm can very quickly be tested by anyone having a tank heated with hot-water pipes, for where these are not fixed at the bottom of the tank there will be found to be at least 40° difference between the temperature of the water at the bottom of the tank and that at the top. This is a very good proof of how slow the cold water is to mix with that which is warm when there is no propelling force, as in the case of the fire under the boiler.

The danger from rising water in the stokehole can easily be averted by a little expense. As a rule, the stokehole is brick-built, although I know some that were hewn out of the solid rock and others dug in the chalk. Seldom in either of these instances will there be any trouble with the rising water. The way to avert this is to build first the 9-inch wall in cement instead of ordinary mortar; afterwards cement the sides and bottom of the stokehole as you would a tank, first having laid a floor of concrete, over the top of which is cemented. Mr. Craven gives several illustrations of how the hot-water pipes in the early fruit houses can be arranged. This will, no doubt, prove useful; but so much depends upon the position of the house and the manner in which the mains run that no absolute rule can be laid down. My experience of a sharp vertical rise in the pipes connecting with the main is that at 4 feet the circulation is perfect, and from the easy manner in which the water travels, I should say another foot would hardly make any difference in the circulation of the water.

My experience of six pipes in one house is that five flows, all working from the connection at right angles, is most satisfactory, these all converging into one return pipe at the opposite end, and running parallel to the flow at the entrance. I do not consider that two flows along the front of the house is the best way of arranging the pipes. This system of fixing them is more likely to hurry on the Vines at that part of the house, and also to be the means of bringing about a full crop of red spider over the pipes; whereas if they were spread more equally over the house the heat would be equalised throughout the house. I quite approve of the plan of having a valve on both the flow and the return pipes. If this is not done the water is sure to "back up" far too much at times, but sometimes the cost of extra valves prevents this plan being carried out. I find simple throttle valves are of little use in holding back the hot water.

A better plan of supporting the pipes across the border, where this is inside the house, than that of building brick piers, is that of supporting them with light iron girders resting on a pillar at the side next the path and the opposite end let into the front wall. Where the borders are 3 feet deep the cost of building the piers will be much more than the cost of the iron girders; these latter do not take up the border space either.

Mr. Craven does well to point out the advisability of heating the water in the tanks inside the houses. This is a boon to gardeners, but, unfortunately, too few participate in it. It is surprising how quick a tank holding 600 gallons of water can be heated up to 90° with just a flow and return 3-inch pipe connected by one 2 inches in diameter to the main. I prefer the inside of the evaporating troughs painted stone colour; the red, which makes them look "smart," would be objected to in many vineries.

With regard to the packing of the joints I think there is none like those properly made with iron borings. After fourteen years' hard wear I cannot see the slightest sign of a leak, nor has there ever been one in my pipes. There is one objection to this form of making joints: the difficulty of picking them in case of an accident or alteration. For this reason spun yarn and red lead is perhaps to be preferred when well done; but if not so they are certain to leak.

For giving a regular bottom heat, I think there is nothing like a tank with hot-water pipes running either through it or round it. The heat is so much more genial for the purpose, being moist. It is not necessary to have more than 2 feet of water in depth, but the width can be as much as thought fit. As a propagating convenience, there is



nothing like the moist heat arising from a tank. I find anthracite far superior to any other kind of fuel. Not only does it effect a great saving in the yearly bill, but also in labour in stoking. The best proof of this is the desire of the stokers for a supply of this coal in preference to coke.

I find draw-off pipes from the boiler plenty large enough if an inch in diameter. As a rule they are not connected low enough to the boiler. The object of having these draw-off pipes is to periodically cleanse the boilers of sediment which collect in the corners of those of saddle shape. If these pipes are fixed 4 inches or 6 inches from the base it is impossible that all the sediment can be taken from these most dangerous parts. It is generally there that these boilers exhibit their first defect. Some hot-water fitters only connect a pipe on one side of the boiler; this is useless for the opposite one. The best form of outlet is a plug screwed into the end of the pipe, which is generally built into the wall and allowed to project an inch or so. When the boiler is emptied it should several times be washed out by closing the flow valve until the boiler has drained off, then allowing more water to rush into the boiler with some force, the sediment at the base is stirred up, the bulk of it will then run out of the pipe if this latter is close to the bottom of the boiler. Where chalky water has to be used a cleaning out is oftener needed than when the water is less hard.—E. M.

#### ALOCASIA MACRORHIZA VARIEGATA.

NOTWITHSTANDING recent introductions this *Alocasia* when well grown remains a most telling plant for the decoration of our stoves. There are different ways of cultivating it, some growers treating it as they would a *Caladium*, others keeping the plants growing throughout the winter. When plenty of heat is at command I much prefer the latter system, as then there is not nearly so much risk in losing the bulbs as when they are dormant, while the cultivator gets an earlier start when potting time arrives. If they are to be grown as single crowns old plants may be turned out of their pots, and the medium-sized crowns selected for the 6-inch pots, reserving the stronger to be placed five or six in a 12 or 14-inch pot, and the weaker ones for pots about 3½ inches in diameter.

The compost we use with every success comprises three parts good sound fibry loam and one of dried cow manure, broken into small pieces, with plenty of coarse silver sand and a few pieces of charcoal to keep the right amount of porosity. The pots they are to be placed in must have been previously washed and carefully drained. Place some of the rougher portions of the compost over the drainage, and then fill up to about three parts with the compost. On this put the crowns, and merely cover the roots with soil; insert a small stake and tie with a piece of matting to keep it steady until the roots have got a firm hold into the new soil. If there is a little bottom heat at command the plants should be plunged and carefully watered until root growth commences. When fairly established and the white fleshy roots appear on the surface of the soil, fill the pots with the same compost, and as this in turn becomes permeated with roots weak supplies of liquid manure at intervals will do much good in building up solid crowns. During the summer the plants will require large supplies of water at the roots, but as the autumn comes round the supply may be lessened, and just sufficient to keep up root action will suffice during the winter.

If the bulbs are now dormant it would be well to shake them out of the old soil, and put into smaller pots, using a mixture of leaf mould, sand, and charcoal, or in place of leaf mould a small proportion of loam. Plunge them in a genial bottom heat, and keep the soil fairly moist until growth commences. They may then be placed into larger pots, using the stronger compost, as recommended for those which have been kept growing through the winter. During the summer care should be taken that moisture is not allowed to rest upon the foliage when placed in the direct sunshine, or the leaves will soon be scalded, a condition which entirely spoils the appearance of the plants.—R. P. R.

#### NOTES IN SEASON.

To guard against any scarcity of produce in the spring and early summer we have sown seeds of Cabbage, Cauliflower, Lettuce, and Parsley under glass, in soil that has been emptied out of the *Chrysanthemum* pots. We sow thinly, cover slightly, and keep the soil moist. The seedlings soon appear in gentle warmth, and are kept as near the glass as possible to insure sturdy growth. When the seed leaves are developed the plants are pricked 4 or 5 inches apart in boxes about 2 feet 6 inches long, 18 inches wide, and 6 inches deep. Much the same soil is used, with the exception that we place a good coating of old Mushroom bed refuse over the drainage. When the plants commence growing air is admitted on every favourable occasion, gradually hardening them until they can be safely placed in pits or frames, protected with mats in severe weather. We always keep a few boxes of Lettuces and Parsley in one of the greenhouses, and use from them; those placed in the cold frame coming in useful for planting outside.

Carrots and Radishes are raised in a frame on a mild fermenting bed on which soil 6 inches deep is placed. The seeds are thinly sown broadcast, the Radishes being ready for use and out of the way long before the Carrots are fit to pull. As regards varieties most persons have their own particular choice, and those specially recommended by seedsmen of high repute are reliable.

Rhubarb should be ready when wanted; it is forced with sweet

leaves in preference to stable manure, as in the latter much of the brisk acidity of the Rhubarb is lost. By taking up a few roots of Mint and placing them in boxes in a little heat a crop of green shoots soon follows, and they are much appreciated. With a little forethought vexations through a scarcity of garden produce may be averted. We cannot all be perfect, but exchanging views and offering suggestions in a friendly way is pleasurable, and scattered hints are sure to be useful to some readers.—R. P. R.

#### SNOWDROPS.

MR. S. ARNOTT'S article on pages 21-22 will, I doubt not, cause many lovers of these hardy gems to search for novelties—not only amongst Snowdrops, but other flowers as well. Variety is not always found amongst seedlings. The single *Narcissus poeticus* and other varieties have produced double forms, or are in progress, which took place after they had been moved while in bud. Fasciation, and constricted stems or branches, sometimes produce abnormal, large, or curiously shaped flowers, and not unfrequently double blooms. I will not attempt to explain the cause, but simply ask a question. Are the nitrogenous pollen-bearing anthers converted into petals when the flow of proper nourishment is restricted, and do petals require less support for their development than anthers? I have been prompted to make these remarks from observations I have made on plants after manipulation and mutilation of bulbs, roots, and branches.

I have grown the Crimean Snowdrop for upwards of thirty years. At first it was the last to flower, blooming as late as the end of April; but it is gradually losing that character, and at the present time it is as far advanced as *Galanthus nivalis*, while the flowers are variable, showing plainly that soil and climate are taking effect in working a mysterious change.

About twenty-five years ago I moved 20,000 Snowdrops during February, planting them in lines. For two years they did well, giving promise that the shift during the blooming period was a success, but my hopes were soon blighted, as the third year there was scarcely a bloom, and the foliage weakly, and the fourth season there were not more than a thousand bulbs remaining. I at first thought slugs had been at work, through the starch of the bulbs being converted into sugar, as is sometimes the case with bulbs that have been lifted, but in this case it was not so, as the bulbs were not mutilated; there was simply no growth either of roots or foliage.

It appears to me that Snowdrops are sensitive, and suffer from being moved at any time other than when both foliage and roots are dead. If lifted at any other time a precocity starts them into flower, the roots refuse to push forth, the foliage is stunted, no bulblets are formed, and the Snowdrops disappear.

Several years ago I planted some bulbs of the Giant, but they refuse to increase. In the summer of 1892, among other things I had sent me by Mr. S. Arnott, were bulbs of *Galanthus Elwesi* and *G. Fosteri*. One bulb of *Elwesi* showed bud at the end of December, but owing to the severe weather the flowers did not open till the 20th of January, when without sunshine the thermometer stood at 48°. Why this precocity? All the rest of *G. Elwesi* planted at the same time and place, and the same depth, will be at least two weeks later.—W. THOMSON, *Blantyre*.

#### RUSSIAN APPLES.

MOST of the varieties, as given by Mr. Hilborn in the annual report of 1888, have made very satisfactory progress up to date. Thirty-five of the later importations of the Iowa Agricultural College were received from Professor Budd last spring, and were added to the original planting, making in all 215 Russian varieties on trial. This orchard was the first to fruit on the experimental grounds, a number of trees giving specimen Apples this year. Some of them are large, and of fair quality, but further experience is needed before a true estimate can be made of their value. In this connection it may be added that the large and interesting collection of Russian fruit on the farm of the late Charles Gibb of Abbotsford, Quebec (now owned by Wm. Craig & Son), has been, by your instructions, under my observation during the fruiting season of this year. The planting of Russian fruits was begun by Mr. Gibb about ten years ago. Many varieties are now coming into bearing, and it is hoped that by careful observation of the success of the different varieties in that district, a reliable opinion will be arrived at in regard to their possible success and usefulness in the colder parts of the Dominion. The fruit growers of the Province of Quebec, especially, had for years been watching with much interest the self-imposed task of fruit testing—"for the cold north"—undertaken by Mr. Gibb, and it will be a source of satisfaction to them to know that the results which he came so near attaining, will not be lost to the people in whose interest he laboured. It is hoped that, with the added experience of another year, sufficient information will be acquired to enable such facts to be published in bulletin form, as will serve as a guide to planters along the northern limits of present Apple culture; for this is the region where the Russian Apple will be of greatest service. Another purpose which this race will serve, and which will be developed later, is that of giving us hardy stocks for top-grafting. Many varieties already fruited, judging from their poor quality, should be condemned, but will be retained, for the purpose just indicated, on account of their great vigour and hardiness. They will also undoubtedly be the progenitors of a



hardier race of Apples than we now have, by crossing with our American sorts, or by seedling production.

The following list is based upon the observation of four years on the grounds of the Iowa Agricultural College, and the experience of last summer at Abbotsford. The varieties mentioned are commended to the careful attention of fruit growers.

*Zolotoreff*.—Large, conical, rich carmine, with light dots and stripes on the shady side. Calyx open, basin wrinkled, stem short, cavity deep, narrow. Flesh yellowish white, tinged with pink when over-ripe, rather coarse in texture, quality medium. Season early September. A fine handsome Apple. The tree is a vigorous upright grower, with large glossy leaves. Hardy as Duchess. Closely resembling this in tree and fruit are Basil the Great and Titovka.

*Golden White*.—Large, oblong, ribbed, yellow ground, covered with bright red towards cavity, calyx open, basin slightly wrinkled, somewhat ribbed, stem short, thick, cavity small, in some almost closed. Flesh white, crisp, tender, juicy. Sub-acid sprightly, very good season, August to September. Keeps better than Duchess. Claimed by some to keep till midwinter. Tree a good grower of upright habit. Very hardy.

*Arabka* (imported by Ellwanger & Barry).—Large, oblong, irregularly ribbed, dull red on sunny side, shading to dark green. Calyx closed, basin shallow, deeply wrinkled. Stem short, thick set, in closed cavity. Flesh greenish white, rather coarse, mildly acid. Season November to March. In the west the tree has been somewhat subject to blight, but it has not been affected this way in the east. In hardiness it may be graded with Wealthy. This will undoubtedly be valuable in the colder districts. Trees planted ten years ago at Abbotsford have been bearing heavily and regularly the last four years. The Arabka imported by the United States' Department of Agriculture is quite different—an early fall Apple of the Duchess type, very vigorous and hardy.

*Gipsy Girl*.—One of the hardiest and most vigorous of all the Russians. Specimens were taken this season from trees planted two years ago on the Experimental Farm. The fruit is large, highly coloured, of fair quality, and keeps till February. Wherever this tree has come under my notice it has been doing well.

*Royal Table*.—This Apple is of North German origin, the later importation by Professor Budd. The trees at Abbotsford are compact growers, with round topped heads, slender twigs, and medium-sized leaves; they have made vigorous growth, and seem perfectly hardy. Fruit medium to large, conical, ribbed, greenish, with dull red stripes on the sunny side, calyx open, basin wide, wrinkled, stem short, thick, cavity wide, shallow, flesh greenish white, inclined to be tough, quality fair. Season: at this date (January 25th), specimens in my cellar are firm and in good eating condition. It should keep through February. As already stated notes were taken on a considerable number of varieties which fruited at the Experimental Farm and at Abbotsford the past year, but it is thought better to reserve such information for future publication.—JOHN CRAIG, *State Horticulturist, Ottawa*.



#### THE KITCHEN GARDEN.

**Potatoes in Pits and Frames.**—Now that early Potatoes can be bought so cheaply fewer attempt to force them than formerly; but all the same, home-grown tubers are usually superior in quality, and are always appreciated. To meet the demands of large establishments, whole rows of frames or pits have to be given up to early Potatoes, while those in charge of small gardens can only devote a very limited number to this work, early dishes being provided for special occasions only. What is wanted is either a gentle hotbed of leaves or leaves and manure in heated pits of sufficient depth to raise the soil well up to the glass; and in the case of deep garden frames only being available, these should be set on a hotbed 4 feet deep at the back, with a good slope to the south. In this instance again a mixture of stable manure and leaves is to be preferred, this being the least liable to become dangerously hot when warm weather sets in. If stable manure only is available, well prepare this by throwing into a heap to ferment at least a fortnight before using, giving it one or two turns in the meantime, and do not make the bed quite so deep as when leaves are used. Half fill the frames with some of the shortest of the manure, on this placing about 9 inches of light sandy soil, or such as can be obtained by sifting over a heap of old potting compost, notably which has been used for Chrysanthemums. The same depth of soil should be placed in the pits, and in either case wait till this is well warmed through, and the bed underneath has cooled down, so that the trial sticks kept plunged in it can be comfortably borne in the hand before planting the already sprouted sets. Any short-topped early variety is suitable for forcing in frames, though none surpasses the old Ashleaf in quality. When planting open drills about 15 inches asunder and 5 inches deep, in these place the tubers 6 inches apart, levelling the soil about them without damaging the tender and already well

rooted sprouts. Keep the pits or frames fairly close, a little opening being left for the escape of vapour, giving more air when the shoots are through the soil. Cover frames with mats and litter every night, and in heated pits turn on only a very little fire heat.

**Frame Culture of Peas.**—Peas do not stand forcing, but may be forwarded considerably. They can be gathered earliest from plants in properly glazed pits and large frames; but better crops, if later, can be had with the aid of rough pits or frames, at least a fortnight being gained when these are used. The varieties best adapted to frame culture are Chelsea Gem, William Hurst, and English Wonder, the last named requiring the least room, and cropping admirably. Sow about 1 pint of seed thinly in small pots or in boxes filled with light soil, and place in gentle heat, an early Peach house answering well. By the time the plants are 3 inches high, and have been slightly hardened off, the pit or frame should be ready for their reception. Give them the benefit of a shallow mild hotbed of short decaying manure, on this placing 9 inches of rather good loamy soil, deferring planting till this is well warmed through. In planting arrange the rows 15 inches apart, putting out those in pots with a trowel, while those in boxes should be carefully shaken out of the soil, and planted with their roots down straight in narrow trenches. Fix the soil firmly about the roots, and make all level preparatory to dibbling out a row of either Early Paris Market or Golden Queen Lettuce midway between the Peas. If the soil is at all dry give a gentle watering with lukewarm water, but if already in a moist state defer watering till it has become drier. Glazed lights being available keep these close till the Peas and Lettuces are growing afresh, gradually hardening off the two latter, so as to be able soon to make good use of the lights elsewhere. Failing glazed lights roughly protect with mats. Lightly stake the Peas before they fall about. The Lettuces alone will more than pay for all the trouble taken.

**Peas for Planting in the Open.**—The earliest crops in the open can be had by raising a good stock of plants under glass, and planting these out on the first favourable opportunity. The dwarf varieties already named are the best for the purpose, William I., Exonian, and such like affording a good succession. At least one quart of seed ought to be sown in order to be sure of enough Peas to plant rows equal to a length of 36 yards. They move well out of shallow boxes filled with light soil, and this is the simplest plan of raising them. If preferred, either small pots or turves may be used. A very little heat will suffice to bring them on as soon as the weather will permit their being turned out with safety. If Telephone, Duke of Albany, or any other moderately early Marrow Pea is desired extra early, enough plants for filling a good row should also be raised under glass, but not in strong heat.

**Sowing Peas in the Open.**—During the first fortnight in February, weather and state of ground permitting, some of the earliest round-seeded Peas may well be sown, the produce from these forming a close succession to that obtained from the planted-out rows. The more delicate wrinkled seeded varieties ought not, as a rule, to be sown yet, these being more liable to decay in the ground. A south border or a good slope to the south, but well away from the walls, answer best for these early crops, the ground being well manured, and if at all bad working, brought into good condition. Most of the early round-seeded varieties attain a height of from 3 feet to 4 feet, and the latter distance may well be allowed all of them. Where there are long borders available these may be turned to the best account by arranging the rows of tall Peas 10 feet apart, either sowing or planting four rows of dwarf Peas, Beck's Dwarf Green Gem Bean, Cauliflowers, or Potatoes between these. For the Peas open drills 2 inches deep, sow the seed rather thickly, and cover with fine soil. If there are mice in the garden coat the seed with red lead prior to sowing it.

**Broad Beans.**—Much that has been advised in the matter of raising and sowing Peas also applies to these, though it is not often that it is necessary to raise plants under glass. If the rows of autumn raised plants are patchy either make these good by transplanting two or more rows into one, or else raise the requisite number under glass—preferably in small pots—and plant out before they become root-bound. For present sowing Early Longpod and Beck's Green Gem are to be preferred, disposing the seed thinly 2 inches deep in drills 2 feet apart.

**Spinach.**—Autumn sown crops have escaped destruction from frosts, and if a little soot or other fertiliser is carefully sown among the rows and stirred in with a flat hoe an early and strong growth of leaves may reasonably be anticipated. More seed should now be sown, suitable positions being between the rows of newly sown Peas.

**Parsley.**—Frosts have destroyed many of the roots and badly crippled the rest. Unless there is abundance of young leaves forming under glass some of the soundest of the roots should be lifted, placed in large pots or in deep boxes, and gently forced. Also sow seed either on a gentle hotbed—much as early Carrots are sown or in boxes, placing the latter in heat. Some of the plants thus obtained may be kept under glass and the rest dibbled out, a supply of early leaves being the outcome.

**Carrots and Radishes.**—Early Carrots are always appreciated, and so also are Radishes in most cases. Both may be grown together without interfering with each other. Of the former, the quickest to attain a serviceable size is the Parisian Forcing, Early Horn and Nantes Horn also forcing well. Radishes—French Breakfast, Short Top, Red and White Forcing, and Wood's Frame, all force admirably. At this early date moderate deep hotbeds, of not less than 4 feet deep at the back, and facing south, should be formed of leaves and manure, the frame being set on this, and half filled with some of the shortest of the heating material, on this being placed a layer 6 inches deep of light



sandy soil. When all risks from over-heating are past, form shallow drills, with the edge of a short measuring rod, 8 inches apart, for the Carrots, and midway between these for Radishes. Moisten the drills if at all dry. Sow the seed thinly, Radishes in particular succeeding best when no thinning out is needed, and cover either by smoothing over the bed or with a little added fine soil. Keep close and dark till the Radishes show through the soil, which they quickly do, after which admit plenty of light and a little air on warm days, covering the frames heavily with mats and litter every evening.

#### FRUIT FORCING.

**Vines.**—*Early Vines in Pots.*—Those started last November have the Grapes advanced in swelling, the bunches having been thinned directly the berries were fairly set, this being essential for acquiring good size in those that are left, but it is equally important to remove surplus bunches early, quality being of more importance than quantity. The laterals beyond the bunches may be allowed to advance a little, say a joint or two at each development, but the foliage only that is exposed to light is of value for elaboration, and crowding must be avoided. Laterals behind the bunches should be closely stopped or removed where they interfere with the principal leaves. Top-dress with a rich compost or partially decayed manure, to receive which rims of zinc 4 inches deep fitting within the rims of the pots should be provided. Liberal supplies of stimulating liquid should be given, not too strong, and an occasional sprinkling of superphosphate on the surface of the soil will greatly benefit the Vines. Where the pots are standing on brick pedestals and fermenting materials are placed round the pots the roots, being thereby encouraged, extend over the rims by turves placed around them, liberal supplies of liquid may be given where the pots are to remain until the Grapes are ripe, as the roots spreading through the fermenting material gather sustenance which greatly aids the swelling of the berries.

*Early Houses.*—The bearing shoots should be stopped when two joints are made beyond the show of fruit and the leaf at the joint is the size of a halfpenny. If the space is small stop one joint beyond the bunch, or even at the bunch, as it is desirable to have some growth beyond the fruit to attract the sap and encourage root activity, stopping the laterals at the first leaf and allowing no more to be made than can have full exposure to the light. Where there is room the bearing shoots may have three or more leaves beyond the bunch. The more perfect foliage a shoot has the finer will be the Grapes, for their excellence is proportionate with the chlorophyll stored in the parts adjacent to the fruit. Laterals below the bunch may be removed where the space is limited, except from the two lowest leaves, and they should be pinched at every leaf. The great point is to secure well developed leaves fully exposed to light. Tie the shoots down carefully, not being in a hurry, but the points must not be allowed to touch the glass.

*Vines in Flower.*—These should have a night temperature of 65°, and 70° to 75° by day artificially, the air of the house being kept rather dry. Thinning the berries must commence with the free-setting varieties as soon as they are formed; but if the Vines are inclined to produce stoneless berries the bunches should not be thinned until the properly fertilised takes the lead in swelling. Remove duplicate bunches, leaving the best and most compact, avoiding overcropping as one of the greatest evils in Vine culture.

*Stimulants.*—Examine inside borders frequently, and when water is required supply it abundantly a few degrees warmer than the temperature of the house. Liquid manure also should be slightly warmer than the mean of the atmospheric heat, and never be applied too strong. Top-dressings should be applied after the soil has been properly moistened and worked in lightly. All salts, such as those of ammonia (sulphate), potash (nitrate), and soda (nitrate) should be very finely ground, for any undissolved particles coming in contact with the roots may cause damage. They are best given along with dissolved bones and gypsum, say five parts dissolved bone or superphosphate, three parts nitrate of potash, and two parts gypsum, mix, and apply 4 to 8 ozs. per square yard. Sulphate of ammonia and nitrate of soda may be given along with Thomas' phosphate powder, say, 7 lbs. of Thomas' phosphate powder and 1 lb. of nitrate of soda, mix, and spread evenly at the rate of 4 ozs. per square yard. Sulphate of ammonia may be used with Thomas' phosphate powder in the same proportion and at the same rate, but the sulphate and nitrate cannot be too finely powdered. The sulphate of ammonia is best for rather strong loams, nitrate of soda being suitable for light and calcareous soils. If the roots are near the surface it is best to apply the salts in liquid form, say 1 oz. to 8 gallons of water, and supply that quantity per square yard, always at the proper temperature. The basic slag or Thomas' phosphate powder may be sprinkled on the surface before supplying the sulphate of ammonia or nitrate of soda in solution. The fermenting materials on outside borders if any has been used must be attended to, and when the heat declines remove some of the most spent, and renew the heat by the addition of fresh leaves and litter. A light mulching may be given the inside border as soon as the Grapes are thinned; there is nothing better than sweetened manure from horse stables, as damage may be done by an excess of ammonia. Close the house early with plenty of atmospheric moisture.

*Early Muscat Houses.*—Since the introduction of that very fine Grape, Madresfield Court, which forces as readily as Black Hamburgh, there has not been so much need for forcing Muscat of Alexandria early, still there is no comparison of the two for Muscat flavour, therefore, where a house of this variety was closed about the middle of December the bunches are now approaching the flowering stage, when they require a night temperature of 65° to 70°, advancing 10° to 15° by day, closing

the house at 80° to 85° in bright weather. When in flower every bunch should have a large, flat camel's hair brush lightly drawn over it, and if there is a deficiency of pollen that of Hamburgs should be collected, as it may be by holding a large sheet of paper beneath the bunches and a rapping them sharply, and if this is applied to the stigmas of the Muscats the berries will set well. It does not answer to drive early Muscats, but allow time for the proper development of the leaves, otherwise they are so thin in texture as to scorch badly under powerful sun. It is also important to have the roots of the Vines inside, to supply them through the growing season with due moisture and nourishment, and so secure stout short-jointed wood, and thoroughly ripened, otherwise early Muscats are unsatisfactory.

*Succession Houses.*—Attend to disbudding when the growths are sufficiently advanced to show the most promising, but proceed gradually with this operation, retaining the best "shows" for fruit—those that promise the most compact bunches. Tie down the young shoots before they touch the glass, stopping as before advised, and allow canes to extend where it is thought desirable to cover vacant space, pinching the laterals at the first leaf so as to concentrate the elaborated juices on the buds in the axils of the principal leaves. Remove surplus bunches before they flower, it will strengthen those retained, and maintain a genial atmosphere by damping at closing time or when required, but avoid a close saturated atmosphere as it does harm by promoting soft growths and aerial roots. If there is any deficiency of moisture in the borders supply water in a tepid state, but there is no need for abundant supplies until the Vines have leaves to assimilate the nutrient element. A wet condition of the soil in the early stages is more prejudicial than otherwise, as it retards rather than favours root formation. The present is a good time to start Vines for ripening their fruit under the most favourable climatic conditions during August and September. Late houses of Hamburgs should be kept cool so that the Vines may start naturally.

*Late Houses.*—Where the Vines were cleared of the Grapes early in January, then pruned, dressed, and have since been kept cool, a start may be made with such as take a long time to ripen, particularly Gros Colman and Gros Guillaume, as it is essential to the Grapes keeping well that they be ripened thoroughly by the middle of September. Inside borders should be brought into a thoroughly moist condition by a good supply of tepid water. Strong rods should be depressed to a horizontal position or lower, and a good break insured by syringing the Vines and house two or three times a day. The night temperature may be kept at 55°, rising 5° to 10° by day, and an advance of 5° or more from sun heat, with free ventilation.

**Cherry House.**—The trees are now rapidly unfolding their buds, and the blossoms will soon have a beautiful appearance. It is wiser to anticipate than await insect infections by fumigating the house before the flowers expand, so as to make sure that the trees are free from insects, or an application of clear rather strong quassia water will answer the same purpose, repeating at intervals of a day or two. The temperature should be maintained at 40° to 45° at night, and about 50° in the daytime regularly, a genial atmosphere be secured by damping available surfaces occasionally. The house can hardly be too freely ventilated, subject to the temperatures being maintained. If fresh trees are to be introduced they must be planted without delay, shading them when the sun is powerful, and lightly sprinkling them frequently to promote their speedy re-establishment, surrounding surfaces also being well moistened.

#### THE FLOWER GARDEN.

**Zonal Pelargoniums.**—Where cuttings have been wintered thickly either in pots or boxes these will require to be given more room soon, or otherwise they will not plant out well next June. First, however, start them in gentle heat, or wait till they commence growing naturally in their present quarters, and then pinch out their points. Directly they break afresh either place singly in small pots or dispose them more thinly in boxes and pans. Thus treated, and kept for a time in gentle heat, they will make strong bushy plants, effective from the day they are put out. On no account cut off the tops of these autumn-struck plants for the purpose of rooting, as it quite spoils them. Place all old plants, notably of bronze, gold, and silver variegated varieties in a vinery or Peach house being forced. This will cause them to grow strongly, and the young shoots when moderately firm root readily. If the tops are taken off before active growth has commenced many of them will fail to strike.

**Heliotropes, Fuchsias, and Abutilons.**—Old plants of Heliotropes ought now to be topped and placed in heat, the side shoots from these being struck as fast as they form. A few Fuchsias, if young plants are required, to be similarly treated, but the bulk of old plants ought still to be resting in greenhouses or other cool quarters, April being quite soon enough to start these. Young shoots of variegated Abutilons taken off with a heel of old wood strike readily in heat, and in order to have plenty of these very effective bedding plants, lightly prune what stock plants there are in pots and start them in heat.

**Verbenas and Lantanas.**—Stock plants of ordinary Verbenas now in small pots and cool quarters should have a shift and be placed in heat. Keep them well away from the hot-water pipes, and free of other insect-infested plants, and a capital lot of sappy sure striking cuttings will then be obtained. Verbena venosa is best propagated by means of root cuttings. Cut the fleshy roots into 2-inch lengths, dibble these in rather thickly into boxes or pans, the topmost joint not being deeply buried, and place in brisk heat. There will soon be plenty of well-



rooted plants ready for boxing off. Both kinds of Verbenas may be raised from seed, mixed beds of seedlings being very effective. Sow in pans at once, cover with squares of glass, and keep in moist heat till the seedlings appear. Sometimes the seed germinates very quickly, while not unfrequently it is several weeks before it does so. Lantanas may be raised from cuttings or seed exactly as advised in the case of Verbenas.

**Koniga variegata and Lobelia.**—Plants of the Koniga should be placed in heat, and the cuttings struck as fast as they can be obtained. If dwarf Lobelias are to be raised, either by division or cuttings, keep the stock plants on a warm greenhouse shelf. Subjected to a strong heat the tops soon become hard and develop into flower heads. Directly the shoots emit roots just above the soil division should take place, every partially rooted piece duly topped soon becoming a strong plant. Only sappy shoots are of any use for making into cuttings.

**Polemonium cæruleum.**—The variegated form of this plant now in frames or other cool quarters will soon commence to emit roots from the short stems, either buried or just above the surface of the soil, and then will be the time to divide them into as many pieces as there are crowns. Place them singly and rather deeply into 3-inch or slightly larger pots, but still keep them in a cool pit or frame, this plant being most impatient of heat, and also of drought.

**Dahlias.**—If it is intended to increase the stock of Dahlias by means of cuttings, young single-stemmed plants being also the best for all purposes, place some of the old roots in gentle heat, and root the cuttings that are produced separately in small pots. They are best taken off with a heel, and before they become hollow. Dahlias can be raised very easily from seed, but seedlings, as a rule, are not nearly so good as ordinary named varieties.

**Cannas.**—These may be started with Dahlias. In this case each strong growth that eventually forms must be detached with a portion of old roots connected with it. Plants obtained by thus roughly splitting up the old clumps are more effective when planted out than are masses of leaves springing from undivided clumps. Cannas seeds are extremely hard. Before sowing, soak them in a jar of water placed on the hot-water pipes or plunged in a hotbed till they have become soft and swollen to double their original size. All will not be fit to sow at one time. Merely soaking them for a given number of hours will not therefore answer. Place the swollen seeds singly in small pots of good soil, already plunged and warmed in a brisk hotbed, and they will soon complete germination.

**Miscellaneous Plants.**—Seeds of *Acacia lophantha* should be treated similarly to Cannas, and neat little plants may be obtained this spring. The seed of the Coral plant (*Erythrina crista-galli*) is equally hard, and this, too, should be soaked in fairly hot water till it has softened and swollen considerably, being then sown in previously warmed soil, and given the benefit of brisk bottom heat. *Grevillea robusta* seed does not require soaking, but should be sown in a pan, covered lightly with fine soil, and kept plunged in a hotbed till it germinates. The quality of the seed varies considerably, sometimes germinating quickly, at others either failing to do so, or refusing altogether. Plants raised last year would be the most effective in the flower garden.

#### PLANT HOUSES.

**Mignonette.**—Plants in 5-inch pots will have a tendency to grow weakly if not given abundance of air. Be careful, too, that the soil does not become dry. Thin the plants if they need it, half a dozen in each pot being ample, and pinch out any puny blooms that show. If the earliest plants have attained 4 or 5 inches in height pinch back or train the shoots close over the surface of the pot. Those plants that are flowering may have a little artificial manure applied to the surface of the soil.

**Fuchsias.**—Young plants that have been kept slowly moving may be placed into 5-inch pots. A compost of loam, leaf mould, manure, and sand will suit them. Place the plants in a temperature of 50° and supply each with a small upright stake. Old plants that have broken into growth may have the soil shaken from them and be repotted. A vinery that has been started will suit these plants well. Cuttings may be inserted as soon as they are ready, and another batch of old plants can be started in a vinery or Peach house that has just been closed.

**Lantanas.**—Plants that have enjoyed a good period of rest should be cut close back, leaving one or two eyes only of the last year's wood. Introduce the plants into warmth to break; in fact, the treatment advised for Fuchsias will suit them admirably.

**Cannas.**—When these are used in tropical or sub-tropical houses some roots may be started into growth. They should be placed in various sized pots according to requirements. Cannas will start very well in a vinery or any structure where the temperature ranges 45° to 50°, and may be stood amongst other plants in the forcing house if room can be found for them.

**Petunias.**—Bushy little plants of dwarf free flowering kinds in 3-inch pots should be placed into 5-inch pots and arranged close to the glass in a temperature of 50°. They must not be hurried; all that is needed at present is slow growth of a sturdy nature. Plants that are not needed may be pinched and allowed to break again before they are placed in the pots in which they are to flower. Plants kept for stock should be encouraged to grow and a batch of cuttings inserted in the course of a week or two.

**Heliotropes.**—Bushes or standards that have not been cut back will quickly come into flower if they can be placed in a growing temperature of 60°. White Lady is one of the best for this purpose.

Young plants in 3-inch pots place into others 5 inches in diameter, and if kept in a temperature of 55° will commence growth and make excellent decorative specimens in a short time. Plants not required for flowering early may be cut close back and started into growth in gentle warmth.

**Caladiums.**—The tubers of various kinds that have been stored away in a warm house where a fair share of moisture has been maintained will have started into growth. These should be shaken out of the old soil, and be either repotted in various size pots, according to demand, or placed in pans amongst light material until they have started and are ready for potting. We invariably pot and stand them for a time where they have been rested, but keep them syringed in order that the soil in which they are placed should not become dry. It is a good plan to plunge the pots amongst cocoa-nut fibre refuse, so that the soil does not dry too rapidly. Too much water in the early stages of growth will prove injurious. *C. argyrites* started in pans some time ago should be potted singly and pushed on for decorative purposes.

**Achimenes.**—Shake away the old soil and start the tubers in pans of light sandy material. These may be placed thickly in pans, especially if the main stock of decorative plants are to be raised from cuttings after they have started into growth. Plants that have been grown in baskets soak in tepid water and introduce into heat until they start into growth. All tubers that are placed in pots or pans, and introduced into heat, should be plunged where practicable to prevent having to water them too frequently.

**Tuberous Begonias.**—Shake a good batch of these from amongst the old soil, and place the tubers in leaf mould and sand in boxes until they start into growth. They soon start if they can be introduced into the forcing house where they can enjoy slight bottom heat. If the leaf mould is moderately moist a mere dewing daily with the syringe will be all the water they need until signs of growth are visible. Seed should be sown at once on the surface of fine soil made even in pans or pots. A sprinkling of sand may be placed on the surface before sowing. Water gently afterwards with a very fine rose can, but do not cover the seed with soil. Place a square of glass over the pans until the seed has germinated.

**Gloxinias.**—Seed may be sown on the same principle as advised for Begonias. If sown at this period the small plants produced are sufficiently advanced to bear shade without fear of damping before the sun gains too much power. Late plants are always useful, but for these seed should not be sown before the end of April.

## THE BEE-KEEPER

### APIARIAN NOTES.

#### SOME THINGS REVIEWED.

HONEY, as is well known, is a natural secretion gathered by bees from flowers and other parts of plants, and stored by them in hermetically sealed cells of wax. Neglect the sealing, and acetate fermentation quickly sets in; the hydrogen escaping and coming into contact with the oxygen forms a watery emulsion, thus hastening the process, whilst the attenuated ether which gives honey its flavour is rapidly dissipated.

To preserve honey as near its original state and flavour as possible the process of extracting and storing in hermetically sealed jars should be quickly performed, and without applying artificial heat, as that hastens the deterioration of honey. Some very beautiful chemical experiments can be made by the application of heat to honey in a vessel supplied with a nozzle, or without artificial heat if the atmosphere is extracted by an air pump, when the ether may be collected in a receiver.

Chemists appear to be unable to give us any reliable data to distinguish the difference between honey and sugar, so we are ahead of them with our simple experiments. There is seen a decided difference, and happily the detection is not difficult.

The over-extracting by the moderns has necessitated "ripeners," which quickly dissipates the essential oils that make honey so palatable and agreeable, leaving behind a residuum little better than molasses.

The best "ripeners" I believe in the market is the one invented by Mr. T. W. Cowan. It has a drying or evaporating metal surface of 30 feet, by which the honey is subjected to a high temperature and to the atmosphere at the same time. Young apiarians, ignorant of what has been done in the past, are prone to charge me with claiming credit for so-called modern "inventions" to which I am not entitled. Of course this is not true, and I lay no claim to Mr. Cowan's invention.

The beginner will observe that the volatile substances in honey are as essential to its good quality as salt and sugar are to the seasoning and preserving most of our food supplies, although used in small modicums or proportion to the bulk. He must, therefore



endeavour to have his samples of honey with all the virtues Nature gave them, because of the increasing imports of honey. According to the Americans' own showing, nearly 50 per cent. of their honey is adulterated (*vide* "Gleanings" for January 15th, 1893). British honey, to command the market, must not be reduced in quality by foolish actions of the bee-keeper.

#### SUGAR CLEANSING AND BEES DYING.

Professor Cook and others of America say that sugar undergoes a change after being fed to bees, and that it requires a "ferment" to prevent it "crystallising in the comb;" that "pollen" is the necessary ingredient, and unless that is supplied bees fed on syrup made from sugar will die during the winter.

The proposition is absurd. I have always contended that sugar stored by bees contracts a slight flavour, probably through the influence of the honey sac by an abstruse secreting organ or organs. I could quote hundreds of cases to fully disprove such assertions, but a few will suffice. It is a well known fact that our bees gathered no pollen to speak of after the middle of August. Owing to stress of weather it was late in October and even November before favourable weather enabled me to reduce my stock. The bees were given away, and all were fed with pure sugar syrup at a time when there was no pollen to be gathered. According to the American gentlemen these bees should have been all dead; but they are just the opposite, for all are healthy. The absence of pollen during the winter makes healthy bees. We do not remove it from the hives, as it ensures strong stocks and early swarms, but we feed with a few pounds of sugar in the autumn, and that is one cause of our stocks always being so healthy and easily wintered. I have not seen one speck of voided matter on or about any of my hives since shortly after I had them home from the Heather, and the winter has been both severe and protracted. If any ferment was added to honey or sugar the cells would burst, and the bees would die from dysentery.

The cause of sugar-fed bees dying in America is not due to what is stated above, but to cold, arising from the condensed damp upon the hives, and a ventilating floor and porous crown would have prevented the fatality.

#### STORING HONEY.

In the same number of "Gleanings" Mr. G. M. Doolittle asserts that the "field bee gives her load to a young bee, and this young bee carries it to the sections." This is mere hollow assertion. Until the young bee is five or six days old she is not capable of this work, and what if there be no young bees in the hive?

I have watched bees hundreds of times come direct from the fields and store their honey in the super comb. Moreover, I have repeatedly at the moors had bees which formed stocks made up from driven lots that could not be less than two months old and had no young bees. Yet on the resumption of work, after a prolonged idleness of three weeks, in five minutes after the bees began to come in I have on examination witnessed the newly gathered honey glistening in the cells; and similarly with others treated in the spring for foul brood, when honey began to be gathered from fruit blossoms. In a previous article the same author asserts that the maximum life of the honey bees is forty days.

#### VARIETIES OF BEES.

Mr. Benton has given a long dissertation on many varieties of bees to the North American Bee-keepers' Association. My own opinion is that too much weight is put upon what he says being as applicable to bees in this country as in their native land. I have often alluded to that; we can only test bees properly when side by side with others in this country. Mr. Benton makes a mistake when he states the purest Italian Alp bees are to found round the cities of Modena, Parma, and Venice; whereas those who have visited Italy and the Italian Alps have told us distinctly that the pure Italian Alp bee is only to be found in the Italian Alps, Switzerland, and not anywhere in Italy. He has, however, a good word to say on behalf of the Punic bees, describing them as being "excellent honey gatherers." In the same number, page 53, Mr. P. H. J. Baldensperger says, "I have obtained 120 lbs. of extracted honey in a honey flow of about twenty-eight days from the North Africans, but had to fly from their stings."

The savageness of bees under the management of people who are unacquainted with their temper cannot be accepted as a true criterion of their nature in a country where they are properly managed and understood by a truth-seeking and scientific people. The worst tempered bees I have had to deal with throughout the year were the original British bees. I have known them attack people, horses, and cattle a quarter of a mile from their apiary, and seldom could they be approached without being stung, and when at the Heather were perfect demons. Italians and Syrians were sometimes

worse, but their spitefulness lasted a short time only. Punic bees also showed at the Heather a little inclination to be spiteful, but they were not so bad as any of the three mentioned.

Strong attempts have been made from time to time by certain persons who had little or no practical experience with Punic bees to prejudice people against them, and I cannot free myself from thinking that the Editor of "Gleanings" has acted his part well, infallible as he strives to be. He has suppressed one or more favourable accounts of these bees, but gives full prominence to everything that is of a derogatory nature. He publishes a letter about Mr. Cowan, his portrait, and photograph of a manipulation with Punic bees, calculated in my opinion to impress people how spiteful they are, and adds that "Comment on the picture by us is unnecessary further than to note how the natives prepare for war." I entirely differ from the Editor's views. The hives and operators stand in the foreground against a pallisade which separates the apiary from some houses. The hives appear to be narrow frame hives, holding perhaps about half a dozen frames. One of the operators stands with a bellows and smoker, the other stands behind the hive, having in one hand a frame partly filled and held by a grip of some sort, while the other hand, bare, is grasping another frame. Why he has to grip one frame with tongs and is risking his bare hand with another is not easily understood. Neither the detached frame nor the hive itself shows many bees.

Mr. Thos. William Cowan has high eulogiums passed on him for four qualities, the last that he is the owner of 10,000 volumes of books. With one volume a day thirty years would be required to read them through. We had ample proof lately in these columns that Mr. Cowan did not know all that his journals contained. Does his library suggest the reason?

I will now turn my attention to the "Bee-keepers' Record" for February, 1893. Its pages teem with information and queries on the two queens in one hive system. The Editor persists in claiming the novelty of the plan for Mr. Wells. He says Mr. Wells "is entitled to the fullest credit," and goes on to say that it is not the doubling of swarms, as has been suggested by some critics of the two-queen system. The Wells' system is practically our system. It was described years ago in this Journal and practised by us for well nigh half a century. I now challenge the Editor and defy him to prove the Wells' system is "novel" or materially different from our plan of working two queens in one hive as I first gave it in these pages.—A LANARKSHIRE BEE-KEEPER.

#### TRADE CATALOGUES RECEIVED.

Brewin & Sons, Bawtry, Yorks.—*Garden and Flower Seeds.*  
H. Cannell & Sons, Swanley, Kent.—*Floral Guide for 1893.*  
Jones & Sons, Shrewsbury.—*Vegetable and Flower Seeds.*  
Henry Norton, Louth, Lincolnshire.—*Dwarf Roses.*



\* \* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

"**Monkey Tree**" (A. A. P.).—The very distinct Conifer, *Araucaria imbricata*, is commonly called the Monkey Puzzle, because of the difficulty the monkeys experience in climbing it, in consequence of the spiny appendages.

**Avenue Trees** (J. H.).—Of the trees in the list given on page 41, Horse Chestnut and Elm are best suited to the soil; and of evergreens, *Pinus austriaca* and *Picea nobilis*. In your first inquiry you did not state clearly the nature of the soil.



**Pruning Vines (A. A. B.).**—The Vines have made very good canes indeed, but if they had been ours we should have topped them when about half the length for strengthening the base and having bolder buds there. Having regard to the permanent well-being of the Vines we should cut the weaker down to the base of the rafters for encouraging strong growth next season, allowing them to bear no fruit; the strong canes we should shorten to within 18 inches or 2 feet from the base of the rafter, and allow two of the strongest laterals from each to carry a bunch of Grapes weighing 1 lb. to 1½ lb. each. If "quick returns" in fruit is the primary object the canes are strong enough to produce good bunches up a length 6 or 8 feet, but they would be weakened by the crop.

**Stimulants for Plants and Trees (A. T.).**—Neither nitrate of soda nor sulphate of ammonia affords anything like complete nutriment for plants and trees, and if long used alone, though they would incite rapid and possibly too rapid growth for a time, the ultimate results would be the reverse of satisfactory. When the soil contains ample mineral ingredients appropriate dressings of the salts named are beneficial. For plants in pots needing a push on, it would not be wise to commence with more than ¼ oz. of the salts to a gallon of water; but twice the quantity might be safely given to trees in borders that are in need of such stimulants. You do not possess a good grip of the nature, action, and effects of different kinds of manures, and should closely study the subject. The botanical name of the plant from which cotton is commonly obtained is *Gossypium herbaceum*.

**Ribbon Borders (Anglo-Scot.).**—What are known as "ribbon borders" are those filled with lines of plants, each of a distinct colour. Such are scarcely desirable, or even possible, in your case, a mixture being more to the purpose. Tall Dahlias, alternating with either Sunflowers, Sweet Peas in patches, or Castor-Oil plants, would be the best for both borders; and in front of these, 2 feet or rather more away, plant *Fuchsia Riccartoni*, *Zea japonica*, and dwarf Dahlias of the Glare of the Garden type, many of the Pompon and single varieties, which can be raised either from seed or cuttings, also being of a suitable height. In the angles between these, only about 9 inches nearer the front, plant *Lovelies-bleeding*, miniature Sunflowers, tall Zinnias, African Marigolds, Princess Alice Stock, and Chrysanthemums coronarium and Dunnetti. A foot away plant a row of strong, early raised, and tall-growing *Antirrhinums* and *Pentstemons*, the tall Chrysanthemum-flowered Asters and French Marigolds also going well with these. Another foot nearer the front plant either East Lothian or early autumn-flowering Stocks, these being mixed if need be with Victoria Asters or other varieties of the same height. Dwarf Victoria, dwarf Chrysanthemum-flowered, and Empress Asters, *Godetias* Lady Albemarle, Duchess of Albany and Princess of Wales, and Ten-week Stocks could follow next, Tom Thumb Nasturtiums and Gaillardias being also suitable for this row. For the edging a line of dwarf blue Lobelias would be better than Golden Pyrethrum, or the two might be mixed. If the plants in all but the front and three back rows were planted in groups of threes, the borders would be better filled, and stiff lines be avoided. The selection given would commence flowering fairly early in the summer, and be gay till severe frosts intervene.

**Planting Fruit Trees and Roses in Spring (B. D. K.).**—Last year, about this time or a little later, a gentleman who had planted 2 acres of land with fruit trees just before the frost, asked our advice about completing the work (other 2 acres) then, or deferring it till the autumn. We advised him to order trees at once, and tell his nurseryman they would only be accepted on condition that they arrived in a moist state, root and branch. If the ground was in a friable condition when our correspondent received the trees, he was advised to cut off the end of every broken root and plant carefully at once. If the weather was not favourable for planting, he was advised to place the trees in a trench, well covering the roots with soil, and scatter some litter over the slanting tops to shield them from the sun, then seize the first favourable day for planting. Our advice was followed, the long young branches cut back, two thirds of their length being removed. The result was that most of these trees made distinctly better growth than those that were planted in winter (not in the autumn) just prior to the severe frost, and their owner is now delighted with their condition. We have Roses yet to plant, and shall not hesitate in planting. The chief factors for insuring good growth are (1) friable soil; (2) roots not dried by exposure, and all broken ends pruned smooth; (3) shortening the branches freely to reduce the evaporating surface. We shall not mulch with manure now, as we want every possible degree of sun heat to warm the soil and stimulate the emission of fresh roots. We may possibly mulch as summer approaches to keep the ground moist, and promote fibrous root activity near the surface.

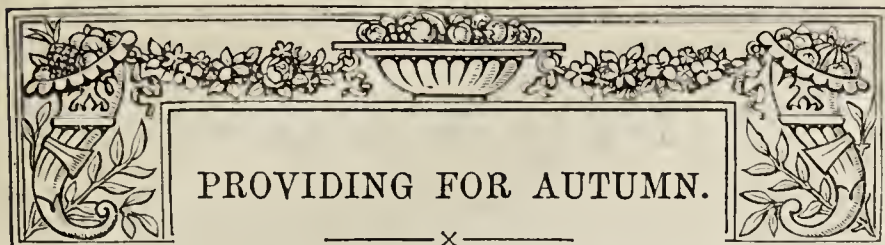
**Asters for Cutting (A. E.).**—There is nothing to prevent one so intelligent and energetic as yourself from succeeding well with Asters, and you ought to send some to Spitalfields as well as Covent Garden Market, the commoner bunching flowers sometimes selling well at the former place. The varieties we can recommend are either Harbinger or Pride of the Market; as a good early white, Queen of the Market, colours mixed, also being a freely flowering strain. The new White Comet is particularly good and sells readily, the flowers resembling Japanese Chrysanthemums, and there is also a blue form of Comet. Varieties with incurved blooms seem to take best in the market, and you cannot do better than grow Truffaut's Pæony-flowered Perfection, colours

various, extensively. There is also a constant demand for white flowers, and you will do well, therefore, to grow a good sized bed of Dwarf White Pæony-flowered Perfection. You failed to state what convenience you have for raising the plants. Probably you have a frame or two. If so form a slight hotbed towards the end of March. Set the frame on this partly filled with some of the shortest heating material, and on this place not less than 4 inches of the best fine soil available. Water this if at all dry; sow the Aster seed thinly broadcast, and cover with a little fine soil. Avoid unduly coddling the seedlings, and gradually expose them to all weathers. If not at all crowded, fairly sturdy plants will result, and these should be moved to where they are to grow when about 3 inches high. If raised thickly, the plants will have to be temporarily pricked out 3 inches apart each way in beds in a sheltered position, and protected with benders and mats for a time. Failing glazed lights, form the shallow hotbed, drive stakes into the corners and along the sides, and with 9-inch or rather deeper boards enclose the bed of soil sowing seed as previously advised. Protect closely with mats or carpets till the seedlings appear, and subsequently during cold nights only. A number of sturdy plants may be raised in that way, and the bed of manure be available either for a Vegetable Marrow bed or for mulching other crops. Asters delight in a fairly rich well-worked soil, failing quickly on poor non-retentive ground. Form beds 6 feet wide to hold five rows of plants, alleys 1 foot wide between them being sufficient. All ought to be planted by the end of May, and from 10 inches to 12 inches apart in the rows. This work is best done in showery weather. Do not wait long for that, however, but give occasional waterings till the plants are growing strongly, when, if possible, a mulching of short partially decayed not fresh manure should be given. The taller growers, notably the Pæony-flowered varieties, ought to be lightly staked, Birch or Hazel spray answering well.

**Sweet Peas for Bunching (A Lady).**—If Sweet Peas are sown on rich deeply dug ground, and early mulched with strawy manure, they will yield flowers profusely and continuously till cut down by frosts. Keeping the flowers closely cut favours this continuous production, the plants being liable to cease flowering directly a heavy crop of seed pods set upon them. Eckford's new varieties quite eclipse the older forms, but are somewhat expensive, or at any rate you might think them so if bought in separate colours. Many good forms are included in packets of Eckford's mixture, and in addition to these you ought also to have either Princess Beatrice or Mrs. Gladstone separately, the delicate pink colour of these varieties being much appreciated by ladies. Carmine Invincible is likewise a taking colour. Also sow at least a pint of the common white form. Very choice varieties are sold in small packets, and in order to lose none of the seeds it is a good plan to sow them in 4-inch pots, five or six in each, placing these in gentle heat, eventually hardening off and planting where they are to flower before they become badly root-bound. This not being possible in your case, be content to sow the common varieties where the plants are to grow and flower, as early in February as the ground can be got into a free-working finely divided state. The choice varieties will not decay in the ground if sown during the first fortnight in March, always providing the ground is not in a cold wet state. Sweet Peas might be sown and grown in patches of about six plants 5 feet apart through the centres of the beds of Asters, with little or no detriment to the latter, and they branch and flower grandly when thus kept in isolated groups. If preferred you could arrange continuous rows 9 feet apart, and fill in 6 feet of the space between with Asters. Anyway, there must be no crowding of the Peas, or they will fail to branch strongly, and not be continuous flowering accordingly. If the seed is sown in drills a pint of seed ought to be sufficient for rows equal to a length of 100 feet. Both rows and patches should be supported, but not too tightly, by good hazel stakes, or the best substitute for the same, and in dry weather occasional soakings with pond, or other soft water, varied by sewage water or liquid manure, may well be given, but if you have a deep strong soil these are not absolutely necessary.

**Orchard and Kitchen Garden (J. H. E. B. H.).**—The old fruit trees may have the heads encumbered with weak and dead wood, and would be improved by a judicious thinning of the crowded parts and cutting out of the old wood. This should be attended to without delay, performing the operation carefully, and with judgment, so as to open out the heads for the admission of air and light. Over-thinning is not desirable, but a moderate manipulation so as to admit of a person between the branches, and the spurs a good hand-breadth apart, is attended with good results. The grass would be best closely eaten off by sheep, supplied with hay, Swedes, Oats, or oilcake, and on different parts, so as to manure the ground equally. The droppings and urine, combined with the treading, would have a beneficial effect on the soil, not only in manuring it but in the destruction of larvæ. If the trees are infested with moss and lichen they should be dusted whilst damp with quicklime, placing the lime in a coarse bag attached to the end of a pole, and a person with a ladder would readily distribute the lime over the trees on a still day. The ground may be dressed with Thomas' phosphate powder 7 lbs., and kainit 2 lbs., mixed, per rod (30½ square yards) after the grass has been eaten off by sheep. If the sheep are not available the orchard should be well manured after the trees have been pruned, forty cartloads of stable or farmyard manure not being too much per acre for neglected orchards, but heavy dressings are often more prejudicial than otherwise, and judgment must be exercised. You will find particulars for making an Asparagus bed in the "Garden Manual," which will soon be republished, and may be had from this





THE "shooting" season, the commencement of which is in August, brings to many gardeners a press of work and worry. Work may be overcome, and in general is not harmful. Worry, on the other hand, is in every respect always bad, and the only means of escaping it lies in being well prepared for seasons of increased requirements. Though gardeners of lengthened experience know what they have to expect, and how to provide so as to meet with equanimity seasons of pressure, others may not be so well equipped. For such of the latter class as feel they need a little assistance I trust what follows may be helpful. There are at least two matters of importance which, if thoroughly taken in hand at the beginning of the season, will have the effect of facilitating the work considerably. The one is to map out what is intended to be done, to allocate as it were to each crop its place. It is not likely that the plans will be quite realised, for the material is of a changing nature, but they will be near to realisation. The other matter is very much of the same nature. It is this: Where garden produce is required in bulk at a particular season the method to pursue is to concentrate one's energies and labour on a few good things. To know what you are doing, and grow only first-rate things, are, I think, matters of great importance. Another thing worth noting is the large number of gardens which are kept simply as productive agencies for supplying certain fruits, flowers, and vegetables, little thought being given to keeping the grounds in a proper condition. In all such cases abundance of a few reliable kinds is again the key which opens the way out of the difficulty.

I shall refer first, and very briefly, to vegetables; and as Potatoes are being discussed I need say nothing of them. Of equal importance with the Potato is the Pea crop. To the inexperienced grower Peas are, in the matter of variety, bewildering. It may be said with truth in regard to both, that a large number of really good varieties may be selected. I know a gardener in a high position whose one and only Pea for early, midseason, and late crop alike was, for years, Veitch's Perfection. This is rather a choice selection; but I believe few gardeners who have grown this Pea will ever care to pass an autumn without its aid. Three sowings of this, at intervals of ten days, in May, with another in early June, and a good breadth of Ne Plus Ultra for a late supply, will yield an abundance of Peas during the autumn. The tips of the growth of the latter variety ought to be removed when they attain to a height suitable for reaching with ease. For ordinary purposes Dr. McLean and Omega are useful. Dwarf kidney Beans will be well secured if either Negro, Canadian Wonder, or Ne Plus Ultra is grown. The former will require to be sown in the first week of May, and either of the three a month afterwards. For Cauliflowers, either Early Erfurt or Magnum Bonum, sown out of doors in March will supply the crop after the earlier kinds are past. Then Suttons' King, sown a week or two later, will form a succession till the time that Autumn Giant, sown in March, comes in. I have seen Stadtholder fairly good till November, but the best of any at that date was Drummond's Late Frankfort.

Lettuces are becoming plentiful, but few can out-rival the ancient Hick's Hardy Cos. There are some larger in size, but not one which turns in better, or is of superior quality when properly grown. Of Cabbage Lettuces there are some very good varieties.

I do not grow many of these, as they generally lack crispness. Spinach is not, perhaps, so much wanted in the autumn as at other times; but it has to be grown. The two best varieties are, I think, Viroflay and Paresseux de Catillon. Very much depends on the care taken with the sowing. Plenty of water in the drills when sowing has a wonderfully good effect. Of Turnips, no better autumn sort than Snowball need be grown. A vegetable which everyone ought to have a couple of sowings of is the London Colewort. The time to sow seed of this is in May, and again in June. If the plants resulting from the first sowing are merely thinned out and not transplanted useful little heads for the dining room are produced early in the season. Express is a good autumn Cabbage, and the seed should be sown in March or April. Brussels Sprouts are sometimes lightly spoken of, but they are useful. The two varieties I prefer are Paragon and Paris Market. Guerande Carrot is quite first-rate, and St. Valery, which is longer, is also good. For ordinary purposes Cranston's Excelsior Onion appears to hold its own for autumn use.

Flowers for cutting are most important. Very often no real attempt is made to meet the demand, as is done in the case of vegetables. But it is wise to do so, and in addition to those grown in borders it is imperative that a distinct supply for cut purposes be also cultivated. In this case the object in view must be considered. The flowers of autumn are numerous; a rigid selection is most likely to be best. There are some flowers which I like to have, as for example Gladioli, by the hundred. In the same way I like to have plenty of the old Cactus Dahlias, Carnations, Sweet Peas, Mignonette, and Michaelmas Daisies.

A supply of good flowers may be secured from annuals alone. Mignonette sown in March or the beginning of April is most useful. Such esteemed varieties as Cloth of Gold, Machel, and Garaway's White should be grown. Sweet Peas also ought to be well cultivated. Really indispensable are such varieties as Countess of Radnor, Lady Penzance, Mr. Eckford, Mrs. Gladstone, Her Majesty, Orange Prince, Mrs. Sankey, Firefly, and Captain of the Blues. The Godetias are very choice for cutting. Sow about the end of March, and give each plant a foot or 18 inches square superficies to cover. The white annual Mallow is fairly good and worth attention. Salpiglossis are really charming. They can be used for the most select purposes. The plants are best raised early in heat and transplanted into boxes to develop strength. A flower I seldom see, but which I like very much, is the single Aster. Everybody grows double Asters, quilled, flat, incurved, but the much more pretty singles nobody appears to pay any attention to. Of other Asters the quilled is very suitable, and I like The Comet. Aster seeds are best sown in April and the plants brought on slowly. They revel in a light rich soil. Zinnias, especially the single form, are good. Of other annuals the common yellow Cornflower ought not to be overlooked, nor Iceland Poppies, of which I had a double strain last year. A packet of mixed annual Chrysanthemums will secure useful flowers for cutting.

Plants of a less short-lived nature are no doubt led by the Carnation. Good Carnations are plentiful, but for cutting the Clove-scented are indispensable, the old red Clove being most useful. Mrs. R. Hole, Germania, and Raby Castle must be also grown. Gladioli are easy to grow, and take but little space. I plant the bulbs about three or four to the foot, three rows close together, and a wider space as a path between every third and fourth row, and find them do admirably. Really good sorts, such as Phoenix, Dalila, Sultana, Meyerbeer, and many others are inexpensive. Very useful also are the various Montbretias, crocosmaeflora being the best for cutting. Etoile de Feu and Gerbe d'Or I also like. Hyacinthus candicans is very good for cutting. It is now cheap, and may be grown extensively. It is easy to raise from seeds. Sow in rows in spring, to remain for two years, and transplant the third and fourth year. Tiger Lilies and Phloxes are fairly useful, but ought not to be employed for any other than common purposes.



By cutting, and at once placing in water, I have found Pentstemons very serviceable.

Of Dahlias no doubt *Juarezii* is the best. Other good varieties are Henry Freeman, white; Honoria, yellow; General Gordon, salmon; Robert Maher, Panthea, and for some purposes Glare of the Garden. I always cultivate a few of the single variety Chilwell Beauty for cutting. In order to have these in flower early the old tubers ought to be planted, and not, as is generally the case, young plants raised from cuttings.—R. P. B.

### PROPAGATING BEDDING PLANTS.

DURING the next three months millions of plants of various descriptions will be propagated in the private gardens of this country. In some instances the work will be carried out under adverse circumstances; in others the labour-saving appliances of modern times will render it simple, easy, and highly interesting. No matter what difficulties have to be encountered the energetic gardener generally overcomes them, and when the time for bedding-out arrives there is frequently not much to choose between the plants which have been raised and forwarded under difficulties and those produced under the most favourable conditions; but there is a vast amount of difference between the attention required in the two instances. In the former a great amount of wasted force has been expended to produce results which in the latter are accomplished with ease. This being so it is obvious that a few pounds expended in the erection of a suitable propagating house or pit, having at command plenty of bottom and top heat, is money well spent. When, however, this convenience does not exist it is a great advantage to know the various conditions under which different plants may be rooted with certainty, for it is a curious fact that propagators who are equally successful sometimes adopt totally different methods of procedure, and the man who is thoroughly conversant with these opposite methods will generally be able to successfully adopt one of them.

The first step to be taken is to see that all plants which are to be rooted in well heated structures receive a fair amount of heat for a couple of weeks previous to the insertion of the cuttings. By taking this course the sap is incited into activity, and the sap vessels being fully expanded are in the right condition to ensure the speedy emission of roots. Many causes of failure might be traced to the non-observance of this practice, which is generally easy enough to carry out, because a large number of bedding plants are grown in vineries and other fruit houses, one or more of which are started at the beginning of January. If the earliest batches of plants to be propagated from are arranged in this early started house the first cuttings will be ready a few weeks after, and others will then be quickly produced. In cases where neither of the fruit houses is pushed on early the work of propagating may with advantage be correspondingly delayed, unless other houses or pits can be devoted to the purpose. Another point which deserves more attention than it receives is to allow the cuttings to become strong before they are taken from the parent plant, for nothing is gained—indeed, much is lost—by beginning too soon. Weak cuttings produce poor plants; and, moreover, the parent plant is increased in vigour by additional growth. The next batch of cuttings come quicker, and are more robust, when this course is followed than when the opposite practice is adopted.

#### PELARGONIUMS.

Given a temperature ranging between 60° and 70° few plants are more easily rooted than Pelargoniums. The soil I prefer for the majority of cuttings is old potting soil which has lain for a few days on the top of a boiler at work or against a chimney stack. If turned a few times while in these positions it becomes thoroughly sweetened, insects are dispersed, and the requisite warmth is also obtained. If a heap of such material is sifted through a half-inch sieve, with a little leaf soil, crock dust, or sharp sand added, it can afterwards be varied to suit the special requirements of various plants. Cocoa-nut fibre refuse is an excellent substitute for the leaf soil where that is not easily obtainable. This mixture will be found especially suitable for Pelargonium cuttings, as they are generally somewhat soft, and are less liable to decay at the base when inserted in rather poor soil.

Where the space can be spared the best of all methods is to insert each cutting—after having made a clean slanting cut just under the joint—in a small 60-pot. There is no possibility of overcrowding when this plan is followed, the growth is firm and sturdy from the start, and no further potting is required. One crock, covered with moss or rough leaf soil, is all the drainage necessary. Open stages placed on the hot-water pipes in vineries

or shelves near the glass are excellent positions in which to stand the pots. Well heated pits with a stage formed of boards, over which a little cocoa-nut fibre refuse or sifted coal ashes have been placed, afford an exceptionally good position for them. Cuttings of the Tricolor and Golden Bronze types should, if possible, be given such a position; they can then be kept quite close and given the exact treatment required.

If space cannot be afforded to place each cutting in a separate pot, boxes should be used. If made about 2 feet in length, 10 inches wide, and 2½ inches deep, these will afford room for from forty to fifty cuttings, according to their size. Half an inch of cinders or broken crocks, covered with a layer of rough leaf soil or moss, supplies sufficient drainage and leaves ample room for the soil, which ought to be pressed moderately firm with a board made to fit easily into the box. This is a very convenient method, as large numbers of cuttings can be raised in a limited space; but of course they should be placed into pots as soon as the cuttings are well rooted, by which time higher temperatures prevail in the majority of glass structures. When only a few cuttings of many varieties require to be inserted 6-inch pots answer admirably. These will accommodate nine cuttings, and are of the right size for standing on hot-water pipes and in dry corners where many things do not flourish, but Pelargoniums root quickly. In all cases the soil should be surfaced with sand, and the cuttings, when inserted, receive a good watering. The subject will be resumed.—D. W.

### LILIES VERSUS ROSES.

I SUPPOSE that for one person that cultivates Lilies 500 cultivate Roses. In all summer horticultural shows Roses occupy the first place, but Lilies take a back seat. There are special Rose exhibitions and a National Rose Society; the modest Lily hangs its head in obscurity. Why is this? Is the Lily inferior to the Rose? I think not. For purity of colour no Rose can touch the Lily; for fragrance, in my opinion (a matter of individual taste), no Rose can equal in delicacy the perfume of the speciosum or longiflorum group, including *L. Browni*, or in strength that of *L. auratum*. For lasting as a cut bloom, whether as regards colour or fragrance, the Lily will keep good during a week; the Rose is gone in twenty-four hours. Under glass one may have Lilies all the year round in bloom; not so Roses. For grace and stateliness, granted equal excellence of growth and cultivation to both, there is no comparison between any Rose bush and *L. auratum*, longiflorum, or speciosum. Whence, then, the difference in popular cultivation? I suppose that the Lily is generally held to be far more difficult to grow than the Rose; that after flowering the bulb often perishes, that renewals are costly and troublesome; but surely this is because the cultivation of the one is less understood than that of the other. A deciduous bush renews yearly only shoots and flowers; the Lily, in addition, has to make a bulb, on the size and soundness of which its future life depends; hence a greater demand that its environment should be suitable and its requirements understood by the cultivator.

Now, as regards environments. It is true many soils do not suit Lilies; they require moisture and a fair amount of sunshine; light sandy soils therefore do not suit, neither do heavy cold clays. Given partial shade, abundant moisture combined with drainage, and a fairly open retentive soil, Lilies will do well. If you wish to see them well grown go to Kew and admire the beds there. Now this environment is more restricted than that required by the Rose, and it cannot be found in many gardens, but it can be had artificially. In my town garden of 20 feet by 50 feet I grow in pots magnificent groups of longiflorum, speciosum, and other Lilies; but I take care that the pots are large enough, and never use less than a 10-inch pot for a single bulb. Large bulbs or several bulbs together require a pot up to 15 or 18 inches wide. Sankey's pots are deeper, and therefore give more room to the requirements of the roots. The soil I use is a fibrous loam with some sand and peat to keep it open, and the plants get sunshine about half the day. They are kept well watered, this being most important. If not plunged they get soaked every evening at sunset; if plunged, every other day; during growth some Clay's fertilizer is also added. I have magnificent growth, splendidly coloured, and fine blooms, and grand bulbs for the next year, and this in a town garden. If one can do this so easily, why not others? A grand pot of *L. longiflorum* or speciosum in flower is a graceful, beautiful sight, well worth a little trouble. Green fly does not infest my Lilies like it does my Roses, and no caterpillar eats the buds.

I finish, therefore, by again asking, If Roses why not also Lilies? I could add much more in favour of Lilies, but one point more should be mentioned. A Lily coming in flower in the open garden may be taken up with care for its roots, potted, and well



watered; it will bloom and complete growth without injury. I never heard of a Rose bush treated thus successfully; but I have often been asked incredulously, "Can these Lilies really be grown out of doors?"—ALEXANDER WALLACE, M.D., *Colchester*.



#### CATTLEYA PERCIVALIANA.

THIS is a grand and very free winter flowering Cattleya. Out of a small consignment had a couple of years ago one is a long way ahead of the others, which have all flowered. The plant in question bloomed in January, 1892, and again in the corresponding month of this year, and is still flowering. The petals and sepals are the same colour, but much larger than are those on the other plants, while the lip is also larger and the colouring very rich—rosy-pink and purple, and edged with white shaded with pink, the throat being a deep orange with dark base, and fringe.

This Cattleya is a good grower, and, together with the several varieties of *C. Gaskelliana* and *C. Trianae*, help to make the house gay during the present time of year. Plants potted firmly and well up in the pots in a mixture of sound fibrous peat and sphagnum moss, and good drainage being afforded, make a free growth when given plenty of heat and atmospheric moisture during the summer months. The material about the roots should be kept uniformly moist during that period, and afterwards well maturing the growth being all that is necessary from a cultural point of view to achieve satisfactory results in flowering.—H. W. W.

#### PHAIUS ROSEUS.

THIS very distinct Phaius was collected by the Right Hon. the Earl of Scarborough. The habitat, says the *Kew Bulletin*, is not absolutely known, but it is supposed to be West Tropical Africa. It flowered in Lord Scarborough's collection in December last, and was sent to Kew for determination. The flowers are of a delicate light rose shade, the lip somewhat marbled with white spots, the disc with a white hairy fleshy keel and a minute tooth at the apex, and the spur deep yellow. In fading the flowers pass to a light orange-buff shade. It would be the second species discovered in Western Africa.

#### PHOLIDOTA LUGARDI.

This species is allied to *P. articulata*, *Lindl.*, but is altogether a more robust plant, more erect in habit, and larger in all its parts. The sepals and petals are semi-pellucid white, and the sac of the lip pale flesh-coloured, the keels unequal and buff-coloured, and the base of the auricles deep yellow. It flowered in the collection of Sir John Kirk of Wavertree, Sevenoaks, in June, 1890, when he forwarded it to Kew for determination, together with a living plant, which has since flowered. It is one of a large collection made by Captain Lugard in Western Burma—(*Kew Bulletin*).

#### PHAIUS TUBERCULOSUS.

A SPECIMEN of this rare and beautiful Phaius is now flowering in the warm Orchid house at Kew. Unfortunately this species has proved very intractable under cultivation, and, as most growers experience great difficulty in preserving it in even moderate health, a well flowered plant may be looked upon as a triumph for the successful cultivator. The Kew plants are grown on Tree Fern stems, with living sphagnum about the rhizomes, in a hot, moist, shady corner of a propagating pit.

*P. tuberosus* is a comparatively recent introduction. The first plants brought to this country from Madagascar were sold at Stevens' Rooms in 1881, and realised high prices. It first flowered in England in the same year in the collection of Sir Trevor Lawrence. Since then many Orchid growers have tried to overcome the difficulties of its cultivation, most of them with but indifferent success. In general appearance this species differs considerably from its allies. It has a creeping stem from which spring the slender pseudo-bulbs with narrow leaves 6 to 9 inches in length. The erect spikes bear from four to eight flowers about 2½ inches in diameter. The beauty of the flower lies chiefly in the lip, which is three-lobed and of considerable size. The middle lobe is white tinged with rosy purple, the lateral lobes are larger and curve

inwards, colour dull crimson, freely veined and spotted with golden yellow. It is undoubtedly the finest species yet introduced.—A. B.

#### CALANTHE GIGAS

The number of bold and striking *Calanthes* is not great, consequently there is little fear of so fine a hybrid as *C. gigas* passing unnoticed, and it is not surprising that when exhibited by Messrs. Veitch & Sons at the Drill Hall on January 17th it should have received marked attention. By common consent it took rank as a great acquisition, and a first-class certificate was awarded to it by the Orchid Committee. The plant is the result of a cross between *C. Sanderiana gigantea* and *C. vestita grandiflora*. It is bold, vigorous, and effective, the stout spike containing numerous



FIG. 24.—CALANTHE GIGAS.

handsome flowers, the sepals and petals of which are ivory white, and the lip rich rose. Fig. 24 represents it.

#### DISCUSSION ON APPLES.

##### UNCTUOUS APPLES.

SOME time ago criticisms appeared on my use of the term "unctuous." I think it is correct. It means of the nature and quality of an unguent—oily or greasy to the feel. The unguent on Apples is an exudation slightly sweet and adhesive. My object in touching upon the subject again, however, is not to give information, but to obtain it. There are both fruits and vegetables which produce wax upon their surface. Wax is a fat produced from sugar or its relatives. In that case it would be as proper to call the exudations "unctuous" as it would "glutinous." There is, perhaps, no difference in the mechanical or the chemical change of honey or sugar into wax by the bee from that of the fruit or vegetable, or of any animal that produces fat. The chemist



changes starch and other cellular substances into sugar, but I believe the changing of these substances into wax is not yet discovered. How is the wax on fruit produced?—by oxygen externally, or in combination with internal acid? Let those who can enlighten us on the subject do so.—W. T.

DR. HARVEY.

WILL Mr. Chinnery, if he has any fruits of satisfactory form, kindly send half a dozen of this Apple to the next meeting of the Fruit Committee of the Royal Horticultural Society, Drill Hall, Westminster, and also if he has some of Wormsley Pippin? It would be very useful if the doubts as to the identity of these and Waltham Abbey Seedling could be cleared away. It would then, if found identical, be a question as to which appellation was the oldest. If Mr. Chinnery has not samples of the kinds named perhaps some other readers may have them. It was long since shown that there was no connection between Golden Noble and Waltham Abbey Seedling.—A. D.

ROYAL PEARMAIN.

THIS is an excellent late dessert variety; fruits about the size of those of King of the Pippins, shape of Scarlet Incomparable, but has an open eye, like that of Blenheim Pippin. It does remarkably well at Dropmore, and Mr. Herrin speaks in warm terms concerning it as his very best late dessert variety. I have just tasted a fruit, and find that it has very crisp, juicy, and well-flavoured flesh. So far as form is concerned it is really a handsome Apple, and seems to be well worthy of extended cultivation.—A. D.

HOLLANDBURY.

I CAN fully endorse what has been said in favour of the above variety. Not only is it a handsome and good Apple, but the tree is also a sure cropper. An old tree in the gardens under my charge bears heavy crops of beautiful fruit. The soil in which it is growing is very heavy, resting on clay, in a low situation. If I were planting Apple trees extensively I should certainly include a good number of this variety.—R. MORSE.

WALTHAM ABBEY SEEDLING.

WITH me this variety has been the most obstinate of all in producing a crop of fruit until this year. The tree, a freely grown bush, has been planted a dozen years, and it has been root-pruned twice during that time. Our heavy soil seems to suit its growth admirably; there is not the slightest trace of canker, the wood is a good colour, and the foliage perfect in health. Last year it produced a full crop of handsome fruit, and the prospect for this year's blossom is good. My experience suggests that, good as this Apple is for cooking, the tree is too slow in bearing to be recommended for heavy soil if a quick return in fruit is desired.—E. M.

RINGER.

IN a cottage garden a large tree, which cannot be less than forty years old, of this variety bears abundantly almost every year. This is a grand variety for use during August, September, and October. For cooking purposes this Apple is equal to Lord Suffield or any of the Codlin type. In addition to the fruit consumed and given away from this one tree last year, the remainder were sold to a higgler for 23s.—not a bad return from a tree which receives nothing in the way of cultivation. Apparently the tree has not been pruned since it was planted.—S. P.

A COOKING TEST FOR QUALITY.

THE interesting and instructive notes on Apples in the *Journal of Horticulture* reminds me of a trial of Apples in a cooked state. About 100 varieties were tried, with the following result:—First quality.—Rich, crisp, juicy, and briskly acid, some having a distinct perfumed aroma. Bismarck, The Queen, Schoolmaster, Stirling Castle, Stone's or Loddington, and New Northern Greening. Second, very good.—Tender, juicy, sugary, and pleasantly sub-acid, some briskly acid. Warner's King, Peasgood's Nonesuch, Cox's Pomona, Hawthornden, Small's Admirable, Prince Albert, Omar Pasha, Striped Beefing, Old Winter Pearmain, Holland Pippin, Tower of Glamis, Ecklinville Seedling, Cellini, Beauty of Kent, Gravenstein, Blenheim Orange, Bramley's Seedling, Rymer, and Normanton Wonder. Third group.—The Codlin type, well known and invaluable for early use, the best being Keswick Codlin, Lord Suffield, Pott's Seedling, Domino, and Golden Spire. Fourth group.—More or less unsatisfactory in flavour. The Crab, Cockpit, Betty Geeson, Lord Grosvenor, Annie Elizabeth, Lord Derby, and Sturmer Pippin. The indifferently flavoured Apples are mostly greenish-fleshed varieties. The same remark applies to many yellowish-fleshed sorts, but there are exceptions.—W. B., *Lincoln*.

## SEASONABLE HINTS ON FLORISTS' FLOWERS.

I HAVE always regarded, whether rightly or wrongly, the month of January as the most trying month in the year, for what we older florists used to consider florist flowers pure and simple. Of late years many have been classed by some writers under that term. It is not on account of the great cold, although it is probably the coldest month of the year, but because in such flowers as I write of which are wintered in pots in frames there is so much fear of damp, as in severe weather the flowers have to be kept close, and hence damp is apt to injure the plants; therefore, although we must not halloo yet, for we are not out of the wood, yet when the month of January is past the greater portion

of our winter troubles are over. Let me here remind those who read these notes that I do not write from the exhibitor's or large grower's point of view. My selections are small, and I grow them for home pleasure, not for display on the exhibition table.

AURICULAS.—I generally find that, provided the frames or pits are well protected from frost, a hard winter suits these plants; indeed, frost will not kill them even though the soil be thoroughly hard, but it is apt to crumple the blooms and cause them to come out of character; but when protected they remain without water for so long that they are preserved from damping. I remember old George Lightbody once telling me that he never gave his plants any water from November to the end of February, but this was in the far north, at Falkirk. In looking over mine I find the winter losses to be fewer than usual; indeed, the only plant which I have to mourn the loss of is Booth's Freedom, an old flower and one always difficult to keep. The plants ought to be gone over thoroughly and all dead and decaying leaves removed, and if there is any sign of aphid the plants should be brushed with a camel's-hair pencil, or the frames or pits may have a slight smoking of tobacco paper. Woolly aphid, which used to have such terrors for us, is now regarded with much less dread; indeed, I take no trouble about it. If it appears at the neck of the plant I remove it, but in no other way at this time of the year does it disturb my peace of mind. The surface of the soil in the pots should be gently stirred with a blunt stick; and as always great cleanliness should be observed water will have to be given more frequently as the month advances, and air at all times when the weather permits it. As I grow my small collection in a pit ventilation is much more easy than in frames.

CARNATIONS AND PICOTEES.—To those who grow these flowers in pots this will be a busy month, for all ought to be finished before the month is out. There is no other way in which these plants can be so successfully grown for exhibition. The compost has of course been thoroughly prepared long ago, and potting is the only thing to be done. When the plants are placed in the pots a small stake about a foot high should be placed to them to give way by-and-by to the permanent blooming stakes. It is best, where possible, to place the potted plants in some place where they can be sheltered from the parching winds and heavy rains. As I do not grow them in pots but only in a bed in the open my plants which are to fill my beds are now in small pots in a frame. On looking over them I find them strong and healthy, and free from that woeful enemy spot. I have long since given up the idea of leaving them out in the beds all the winter. Some kinds will stand it, but unfortunately you cannot tell which they are, and thus I have seen in a severe winter a clean sweep made of the old Clove, while Mrs. Reynolds Hole has stood the two last severe winters in my border uninjured. It is therefore wiser, as I think, to keep even the border varieties in pots. They must now be kept clean, and all decayed or decaying leaves taken off, and the pots kept clear of weeds. Should green fly make its appearance it should either be brushed off with a camel's-hair brush, or the frames should have a smoking of tobacco paper.

GLADIOLUS.—I have a sorry tale to tell of these, into which I may enter more at length at some other time; but never but once have I had such losses, and when I say that nearly two-thirds of my collection is clean gone, it will be seen how heavy the blow has been. The roots should be carefully looked over, and although I do not plant as yet, there are some kinds which make considerable shoots even on the shelves where they are placed. Shakespeare, Adolphe Brongniart, and others are apt to do this. They should be potted in small pots in strong loam, so that when they are turned out the roots will not be displaced. The frosts which we have had ought to have mellowed the ground for planting.

PANSIES.—These are always difficult plants to manage in this southern latitude, and although the Fancies are much more robust than the old Show varieties, I find them very likely to go off during the winter, especially when, as during the past two months, the frames have to be kept tolerably close; they then damp off, and I have lost a considerable proportion of my small collection during the past winter. I only grow them in pots, and at this time place them in larger pots than they have been wintered in; they are then replaced in the frame, given as much air as possible, and watered when the weather permits it.

ROSES.—I do not think it necessary to enter upon any details about these flowers, a space being devoted in this journal especially to them, nor have I as yet ascertained for myself what the effects of the winter have been. I saw my neighbour, Mr. Foster (the inventor of the patent tube, &c.), and he told me that while his old plants were all safe, he was afraid that he had lost five-sixths of his buds. I hope this is not the general tale. I am not myself a *Buddhist*, and so know nothing about such plants. My own plants seem, even the Teas, to have escaped tolerably well.

RANUNCULUS.—The time for planting these has now arrived, and I am truly surprised at the disfavour, or rather, I should say, neglect into which they have fallen. I know they are troublesome, but a lover of the garden does not, as a rule, mind that. I believe the trouble was made greater in former times by the minute directions given for the preparation of the beds and their general culture. I am ready to grant that when these directions are attended to there may be a greater certainty in their culture, but I am quite sure they are not in many cases absolutely necessary. Where there is a good garden soil, and the situation not too hot, the soil rather moist than dry, but free from stagnant water, they can be grown with success, and now is the time for planting them. The bed, for they are worthy of a place to themselves, should be flat, about 4 feet wide. When planting drills should



be drawn not more than 1½ inch deep, a little sharp sand placed on the bottom, and the tubers pressed firmly in. The best distance is about 5 inches, and the rows should be about 4 inches apart, and care should be taken to get rid of worms as far as possible, as they are very apt to displace the tubers. When I used to grow them under name this was a great annoyance, as the roots used to be drawn up, and one could not tell where they belonged to; indeed this was my chief reason for giving up the practice of keeping them distinct. I may be asked where are they to be obtained. In former times Carey Tyso of Wallingford and Geo. Lightbody of Falkirk used to grow a grand lot of varieties they had raised from seed, and in their catalogues roots figured at half a guinea, and even a guinea each, but these good florists have passed away, and I really do not know of any English grower for sale. Collections may be obtained from some of the Dutch growers, but it will be necessary to weed them out very carefully when they bloom (many semi-double, &c., show the eye very soon); and by thus selecting the best, by degrees, a good collection may be obtained. There is also a class called French; they are showy in a border, but will not satisfy the ideas of those who have been accustomed to the refined and beautifully formed Dutch varieties.—D., *Deal*.



#### NATIONAL ROSE SOCIETY'S FIXTURES.

I WAS very much astonished to read in a letter signed "J. B." (page 109) that the reason, or the chief reason, for the retirement of Messrs. Hall and Whitwell from exhibiting was the early date of the Metropolitan Shows of the Society. I was perfectly sure, as they were intimate friends, that it was not so; but to make assurance doubly sure I wrote to both of them, and have received a reply to say that there is no foundation whatever for the statement. In both cases it was the excessive fatigue and anxiety that led to their retirement, and the date of the Metropolitan Shows had nothing to say to it.—D., *Deal*.

#### ROSES AT THE WOODBRIDGE SHOW.

ROSES are always a special feature at the Exhibition of the Woodbridge Horticultural Society, and the 25-guinea challenge cup with the National Rose Society's silver-gilt medal, offered for twenty-four distinct blooms, ought to bring forth a good competition at the Show on July 13th. Last year this coveted prize was won by Mr. Frank Cant.

#### THE ROSE DERBY.

IF I have made an incorrect statement as to the date in which my friend Mr. Grahame's name first appears as a member of the National Rose Society I hasten to express my regret for so doing and at once apologise. I have before me the N.R.S. reports for the years 1885 to 1892 (the previous years I have mislaid), and on looking through the list of members given in these last eight years' reports I observe that Mr. Grahame's name appears for the first time in these lists in the report for 1889. Hence my statement. I gather from Mr. Grahame's remarks that he has been a member of the N.R.S. since 1878, and therefore conclude that the list of members published in the N.R.S. annual reports is in some years incomplete. I am, moreover, exceedingly sorry to have vexed him in any way by my criticism, but to correctly estimate the strength of northern Rose culture, and the date of the northern season, one should be in a position to do so from lengthened experience and personal observation.—JOSEPH H. PEMBERTON.

#### TEAS IN MIXED CLASSES.

"J. B." (with whom I am very glad to be more in accord than used to be the case) finds a grievance (page 109) in the fact that boxes containing only Teas were allowed to win in classes for "Roses" at the Metropolitan Show. But surely this does not prove that "especial favour" was shown to them. If the Judges considered them better as "Roses" than the other boxes, why should they not win? It seems to me that, to be equitable in his contention, "J. B." should also consider that a winning box of H.P.'s only, in the mixed classes, would be a mark of "especial favour" to H.P.'s.

It is not many years since the amateur champion trophy was won by a forty-eight which had not a single Tea in it; yet none of the "Tea men" dreamed of complaining. Would "J. B." like a rule that there must be a certain number of Teas in exhibits in the mixed classes? for that seems the fairest form of his suggestion, unless he would have a separate department for H.P.'s only.

Many thanks to "Y. B. A. Z." (page 109) for his notes on moss; but there should not be much difficulty in the moist Fern-growing counties of the West of which he speaks.

In my last letter (page 108) an accidental omission (in my MS., no doubt) makes it seem as if I had wilfully misunderstood "D., *Deal*'s," assertion that it is "a very idle matter to compare the arrangements of a great show at the Crystal Palace to any provincial one, however good."

He adds, "In the latter you are confined to one tent, and you can get to any part of it in a couple of minutes, not so at the C. P., as many know to their cost." Quite so, but we have twice at least had to show in a tent at the Crystal Palace, and I appeal to exhibitors on those occasions as to whether there was any improvement in the arrangements and general convenience.—W. R. RAILLEM.

#### ROSE SHOWS.

IT is quite refreshing to read the little duel in words which has been going on in "our *Journal*" concerning Rose Shows, the date thereof, and proxy voting. Now, instead of all this bantering is it not time we turned our attention to something a little more artistic, and at the same time natural in our exhibitions? We are too formal. What is more hideous than the long line of boxes, some of them evidently in need of a good scrubbing, untidy dingy-looking moss, the names of the Roses on wide pieces of cardboard very much *en evidence*? Then again, the stiff arrangement; scarcely a bud to be seen, nothing but the huge show blooms. Why cannot we break through this formality? Why not offer prizes, good substantial American prizes, for the best naturally arranged group to comprise some of all the different sections of the "national flower." Let us have masses of bloom. What can be more lovely than large bunches on long stems of such varieties as L'Idéal, Gloire de Margottin, and Laurette de Messing placed in a large vessel of water so that they are worth looking at by the time the public are admitted, instead of drooping as is now too often the case. Plenty of space should be allowed for these groups. Overcrowding is the crime of the present day, both socially and horticulturally.

I maintain that the National Rose Society should be the first mover in this innovation. Let us have a show worthy of our country. Why need we be dependent on the Crystal Palace Company? Could it not be arranged with the Royal Botanic Society to hold the show in their splendid gardens? There is no better place near London for holding an exhibition. I have often been surprised that the R.H.S. has never endeavoured to amalgamate with the R.B.S. and thus have a place of meeting worthy the name instead of the miserable Drill Hall.

Then, again, there is the question of the medal Roses. Could not a prominent place be set apart for these, so that when selected they could be brought together and thus their beauty seen to the best advantage? —W. E.

#### ATTAR OF ROSES.

IT is well known that the great centre of the production of Attar, or Otto, of Roses occupies the northern portion of the old Turkish province of Eastern Roumelia. The cultivation of Roses for this purpose is, however, limited to the southern slopes of the Great Balkans, as the flowers are nowhere produced successfully on the north. The distillation of the petals is carried on in a very primitive manner with a copper still of the simplest construction. The first runnings are returned to the still, and the second are received in glass flasks, where they are kept for a day or two at a cool temperature to allow the oil to rise to the surface. From the latter it is skimmed by a small tin pipette or funnel, with a long slender handle attached to the top, and a very small aperture at the lower pointed end. This funnel is not more than three-quarters of an inch diameter at the widest part, so that it is easily inserted into the flask, and plunged below between the oily layer and the water. It is then at once brought up, and it brings with it a portion of the oily stratum with a small quantity of water. The water escapes through the aperture at the bottom, while the oil or otto is emptied into the collecting flasks. For exportation the commercial attar is transferred to flat circular zinc receptacles known as "coppers," which are carefully sewn up in white felt and sealed with the exporter's stamp, the brand being also stencilled on the felt outside. Two of these "coppers," one covered with the felt, and the other without, are contained in the Museums of Economic Botany at Kew, and to these Messrs. Piesse & Lubin have now courteously added a specimen of the pipette or funnel for the purpose of making the collection more complete. As regards the identification of the plants cultivated for attar of Roses, it may be useful to mention that in 1874 the late Mr. Daniel Hanbury, F.R.S., presented to the Kew Herbarium specimens of "Roses cultivated on the slopes of the Balkans for the production of attar of Roses, received from Mr. Vice-Consul Dupuis of Adrianople. These contained specimens of two species, a red Rose (*R. damascena*, *Millar*), and a white Rose (*R. alba*, *L.*). Neither of these is known in a wild state, and there can be little doubt that both are hybrids between *R. gallica* and *R. canina*. The subject is more fully discussed in "Pharmacographia" (1879), page 262.—(*Kew Bulletin*)

#### CANKER IN FRUIT TREES.

(Continued from page 116.)

MR. KRUSE (page 564 last vol.) mentions subsoil without defining it, but I assume that is the cause of the mischief, and where the iron exists in much greater percentage than is shown by the analysis. That being so, the soil, a deep friable loam, incumbent on an aluminous, calcareous, ferruginous, and silicious subsoil, more or less agglomerated, naturally or artificially under-drained. We may consider Mr. Kruse's propositions.

1, Iron in the soil or subsoil. An excess of iron is more likely to obtain in the subsoil and produce mischief in the trees after the roots reach it than a deficiency of available iron in the soil. Neither, however, are other than harmful. It is easy to supply iron, and in doing so still further charge the subsoil with oxide of iron, and though a tem-



porary advantage may be gained, the evil is only permanently aggravated. What must then be done? Supply iron in an available form, say sulphate of iron  $\frac{1}{2}$  to  $\frac{3}{4}$  cwt. per acre early in the spring whilst the ground is wet. That will supply the trees with iron and sulphur for some years, say three, because it is better in practice to apply a manure, if sulphate of iron may be called one, in effective, but not excessive, quantities at one time than spread the applications over a number of years in infinitesimal proportions. Oh! The iron will be washed into the subsoil. So it will, but the cultivator's business is to prevent such an occurrence. How? See to the analysis—iron low (3.38 per cent.), something else is low also, namely, nitrogen (0.17 per cent.) equal to ammonia (0.21 per cent.)—less in fact than a productive chalk soil. Therefore we must apply ammonia or the substance essential to its manufacture—that is “muck,” farmyard manure. Mr. Kruse is right. The land wants ammonia to ammoniate the otherwise unavailable iron in the soil and subsoil which the Apple and Pear tree roots have reached. Twenty-one tons per acre every third year of good farmyard or stable manure would not be too much, supplemented in the second year with a dressing of Thomas' phosphate (basic slag) 5 cwt., kainit  $2\frac{1}{2}$  cwt. per acre, applied in February, and  $1\frac{1}{2}$  cwt. nitrate of soda supplied at three times in equal proportion—namely,  $\frac{1}{2}$  cwt. when the blooms are expanding, the next  $\frac{1}{2}$  cwt. when the fruit is well set and swelling, the third  $\frac{1}{2}$  cwt. when it is half swelled. In the third year bone superphosphate 3 cwt., nitrate of potash 2 cwt., sulphate of lime 1 cwt., mixed, per acre, applied in spring will be beneficial. In the fourth year apply another 21 tons dressing of manure in autumn or early spring, and the  $\frac{3}{4}$  cwt. of sulphate of iron also in the fourth spring, always on the bare ground, leaving it for the rains to wash in.

2, “Would sulphate of ammonia be a suitable manure (of course, phosphorus and potash being added), bearing in mind it is a limestone soil?” How a limestone soil? Is it incumbent on limestone? or chalk, running into silicious matter and forming Kentish rag? That does not matter; the analysis does not show a limestone soil, yet for a loamy soil a liberal percentage of lime, which does not militate against the use of sulphate of ammonia, especially as the soil contains as much alumina as a free working clay soil; and  $3\frac{1}{2}$  cwt. of sulphate of ammonia per annum represents the equivalent of 21 tons of stable manure spread over three years. That quantity ( $3\frac{1}{2}$  cwt. per acre) would, no doubt, supply Mr. Kruse's cultures with the essential nitrogen, and penetrate the soil more rapidly and deeper than the ammonia of ordinary farmyard or stable manures; consequently the iron would sooner become ammoniated and available. Where, therefore, Mr. Kruse may not employ ordinary farmyard or stable manure, sulphate of ammonia should be applied instead, not every year, but on some rotary system, which is better than applying the same substance to the same soil and crop every year consecutively. Nevertheless the amount of potash and phosphoric acid are so good in the analysis that there would, perhaps, be no depreciation in the crops were the manures limited for some years to come to nitrogenous alone, say sulphate of ammonia one year and nitrate of soda the other, applying them as before advised.

Mr. Kruse used chloride of sodium (common salt), which I think is a mistake, as chlorides hinder the acid secretions of tree roots, often cause the foliage to become sickly, and on heavy soils are best avoided. For that reason kainit is objectionable. Salt and kainit are best applied to light or free soils; but not both, as kainit contains 40 per cent. of chloride of sodium (common salt), and enough sulphate and chloride of magnesium without special applications. On soils derived from chalk or limestone, kainit is best applied in the autumn, and it is only in those soils that are poor in potash that it can benefit. To apply potash where the soil contains abundance, as Mr. Kruse's, is to waste money, as it affords little or no benefit, nitrogenous manure being far more beneficial where there is no lack of potash and phosphoric acid. Far less potash, phosphoric acid, and nitrogen is required per acre when they are supplied in soluble form in the proper quantity, and at the right time, than when given in the form of stable or farmyard manure, one-third of the nitrogen of which, according to M. Ville, is lost to the soil on account of the decomposition the manure must undergo before any good accrues. Besides, fruit trees only need supplies of food six or seven months in the year, and though the manufacture of available plant-food is less in the winter than the summer, some is made, and a large per-centage is washed out by rain, so that substances lying in the ground must suffer considerable depreciation in manurial value to the crops. Therefore, by using chemical manures adjusted to the requirements of the crops, and supplying them so as to get their components in those crops instead of losing the major part, as in natural manures, we save immensely, and as the time of applying manures is an important one it may briefly be referred to.—G. ABBEY.

(To be continued.)

#### NOTES ON PEAS.

MR. H. S. EASTY (page 91) broaches a seasonable topic. With Peas, like Potatoes, I consider too many sorts a nuisance, except perhaps to the exhibitor or the lover of novelties. With the exception of the earliest kinds I am of opinion that Duke of Albany, The Duchess, Fortyfold, Veitch's Perfection, and Ne Plus Ultra will not only be hard to beat for all purposes, but are quite enough to supply any family. I am positive that they combine the two essentials, freedom bearing and quality. What more is needed I cannot say. With the exception of Veitch's Perfection, all the other sorts will succeed any-

where with reasonable treatment. The first named can be ready for gathering the first week in July, and sometimes the end of June, by sowing in pots, growing the plants carefully, afterwards planting them out in a properly prepared site.

At one time I thought the Duke of Albany Pea could not be beaten, but it can, and by the Duchess. The advantage of the latter is that it grows taller, consequently more pods are produced, these individually being longer, while the quality is equal. Fortyfold is an old variety, but for cropping and quality it is still unbeaten. It is not an exhibition Pea, perhaps, but that is not an important matter with everyone. Veitch's Perfection is too well known to require comment. In many districts this is the only variety grown for market—a sufficient test of its goodness. I am acquainted with a nobleman's gardener who grows no other sort than Ne Plus Ultra except first earlies. This is high praise for this Pea, which is usually looked upon as being so well suited for the latest crops.

Opinions vary on the quality and usefulness of the early sorts. I prefer Cannell's English Wonder to any other. William I. may produce a full crop of pods, but the peas are of inferior quality as compared with many others. Not only are the Peas that I have named excellent in cropping and flavour qualities, but with one exception—Veitch's Perfection—they are all of robust habit and not susceptible to mildew. If a regular supply of, say, two dishes per day can be gathered from these sorts from the time the second earlies come in at the end of June until the end of September, and often the end of October, what more in the way of variety is needed?

I may be told that as all but one of those named are tall growers, the difficulty of obtaining stakes is detrimental to their employment. However, not feeling that inconvenience, and knowing so well the advantage of tall growing sorts over those dwarfer, I intend to adhere to my favourites until I find better.—E. MOLYNEUX.

#### EXPERIENCE IN HEATING.

REGARDING “E. M.'s” criticism of my views upon the subject of heating (page 108), I should be very sanguine if I expected everyone would agree with them. It would be singular if they did. They are simply a record of some of my observations, and may possibly be of use to a few. I will first offer some explanations, also take exception to a few points in “E. M.'s” analysis.

Respecting the introduction of flow pipes into houses, I was of opinion, until taking charge here, that hot water would readily circulate to almost any reasonable height vertically. I have found out since it is one of those theories that do not always work out so satisfactorily in practice. Where fewer structures are heated from one boiler the case would probably be different, there not being such a complication of bends. This tends to promote friction, or where a large number of houses in one range are all heated at about the same level from the mains, presuming the boiler is fixed in a central position, as it should be, the connections at the bottom of these vertical pipes are often as hot as is possible to bear the hand upon. Up them the heat will not go. The pipes being full of water, and no accumulation of air, this occurs in several houses at different times. I wish I was in the position to satisfactorily explain the matter. I can only make a suggestion. With such a number of ramifications, the houses near the boiler containing pipes of easy gradients have, as it were, a circulation of their own. There the heat is obtained quickly, consequently there is a large quantity of hot water in close proximity to the boiler. It seems to me to prevent the colder water in the return main from the distant houses flowing past it. Someone will perhaps say, Check the heat on these houses. Conditions required do not always allow of that to any extent. Often the return main from these midway houses is fairly hot; 2 feet from it, in an upward direction, the same main is correspondingly cold. No amount of manipulation will alter this for a considerable time. I should add the boilers are fixed at one end of the arrangements, not in the centre.

“E. M.” takes exception to the arrangement of the pipes along the front wall. From my experience it is immaterial whether the Vines are planted 18 inches in front of them, or the pipes fixed 18 inches in front of the Vines if the heat is judiciously managed. As a matter of fact the Vines in the lean-to houses here are within 4 inches of the front pipes, the stems protected by boards. Of course I do not advocate that system; I only wish to point out that it does not affect the break of the Vines or the finish of the crop. Proof having been given of that, I do not regard this matter of a few inches of such importance as some cultivators do, neither do I see any improvement in connecting five flows into one return over that of connecting four flows into two returns. It must be a warm corner where these five flows converge, no fear about the wood ripening. One pipe can hardly be expected to receive the contents of five very rapidly.

Iron girders in place of piers, and stone colour paint in place of red, will have little effect on the produce. I use red lead, as being more durable against the action of the water. I quite agree with “E. M.” that iron borings make the soundest joints. With the exception he points out, perhaps all underground pipes would be best made so. Care must be exercised, however; if too much sal ammoniac is used among the borings, as employed by some, there is danger of bursting the sockets. Hot-water tanks for propagating purposes are good; but, as in many other things, expense often stands in the way of their provision.—J. J. CRAVEN, *Allerton Priory, Liverpool.*





**EVENTS OF THE WEEK.**—The ensuing week will not be a particularly busy one so far as horticultural events in the metropolis are concerned. On Monday, February 20th, the annual general meeting of the National Chrysanthemum Society will be held at Anderton's Hotel, Fleet Street, E.C., at 7 P.M. The customary auction sales will also take place at Messrs. Protheroe & Morris' Rooms.

— **THE WEATHER IN LONDON.**—The weather in the metropolis continues to be unsettled. Sunday proved cold with occasional showers, Monday being rather milder. On Tuesday it rained more or less the greater part of the day, and was squally. Wednesday opened fine with south-westerly winds, and at the time of going to press it appears to be more settled.

— **WEATHER IN THE NORTH.**—With the exception of Sunday, which was a fine, clear, cold, winter day, the past week has been a disagreeable one. Cold showers were frequent during the earlier part. The nights of the 9th and 10th were very boisterous and wet. During the night of the 12th 8° of frost were recorded, and on Monday morning the hoar frost lay like snow. Heavy snow fell all the afternoon and evening, but it changed to rain later.—B. D., *S. Perthshire*.

— **GARDENERS' ORPHAN FUND.**—We have pleasure in announcing that Baron Ferdinand de Rothschild will preside at the annual dinner of this charity on Wednesday, March 22nd, at St. James' Hall, Regent Street, and we trust a large and influential company will assemble on the occasion.

— **THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—As an instance of what local societies are able to do in aiding the gardening charities, we are asked to mention that the Reigate and District Chrysanthemum Society has remitted to the Gardeners' Royal Benevolent Institution no less a sum than £136 10s. during the four years it has been established, and has thus been the means of nominating thirteen of its members as life members of the Institution. Mr. James Brown, the indefatigable Honorary Secretary of the Reigate Society, expresses a hope that kindred societies, if able, may be induced to do likewise, and thus not only add to the funds of an excellent charity, but also benefit their own members by conferring upon them, as funds permit, the privileges of life membership of the Institution.

— **GARDENING AND FORESTRY EXHIBITION.**—Just as we are going to press we receive a preliminary programme of the Earl's Court Exhibition during the present year. It is intended to have a continuous representative display of Gardening and Forestry, with special fortnightly shows. The outline schedule appears to be very comprehensive, but particular reference to it cannot be made this week. Mr. H. E. Milner is Chairman of the Exhibition Committee, and Mr. Harry Turner, Slough, Vice-Chairman of the horticultural section.

— **CERTIFICATED PLANTS, 1859-1893.**—A more useful volume than that just published by the Royal Horticultural Society has seldom been issued. This comprises upwards of 250 pages, and contains the names of plants, flowers, Ferns, Orchids, fruit, and vegetables certificated by the Society from 1859 to 1893. The contents are admirably arranged, the work having been accomplished by Mr. John Weathers, Assistant Secretary of the Society. The book will be most valuable for reference, and should have a place in every library of horticultural works.

— **THE WORLD'S FAIR AT CHICAGO.**—We are requested to announce that for the convenience of visitors to Chicago during the forthcoming Exposition, a mammoth hotel is being erected by the World's Fair Co-operative Bureau. The hotel is in blocks, somewhat after the plan of St. Thomas's Hospital, and will contain over 6000 rooms. These rooms will be let at a uniform rate of a dollar a day to those who pay a nominal registration fee beforehand, and thus secure the right of occupancy at any time during the Exposition. The sole representation of the World's Fair Co-operative Bureau in Great Britain has been placed in the hands of the City Press Agency, 1, King's Arms Yard, and 51, Coleman Street, London, E.C.

— **EARLY PRIMROSES.**—A correspondent writes:—"Some fine bunches of Primroses were plucked on Saturday, February 4th, at Penhale, near the Lizard, the weather being delightfully fine and warm."

— **FLOWER SHOWS AT READING.**—We are requested to state that the summer Show of the Reading Horticultural Society will be held on August 16th this year, and that the Exhibition of the Reading Chrysanthemum Society will take place on November 15th.

— **FROZEN FLOWERS** are likely to become as plentiful as frozen meat. At a recent meeting of the Scientific Society of Ipswich, it was stated that a large consignment of flowers packed in ice would shortly be received from New Zealand. It is probable that the frozen flowers will be exhibited at the Museum at Ipswich.

— **SHEFFIELD BOTANICAL GARDENS.**—According to the Committee's report recently submitted, the outlook for these Gardens is not very promising. It would seem that the shares are at almost nominal prices, and unless more adequately supported by the townspeople fears for the future of these grounds are likely to be entertained.

— **THE BIRMINGHAM GARDENERS' ASSOCIATION.**—Three years since it was determined by the Association that an annual social gathering of members, their wives, and friends should take place at one of the principal hotels, and the anniversary meeting was held on the evening of the 8th inst., when a large number spent a most pleasant evening, Mr. W. B. Latham presiding.

— **UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.**—The monthly meeting of this Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last. The chair was taken at eight o'clock by Mr. W. P. Thomson. Seven new members were elected, and one was nominated. Two members only are on the sick fund. The annual meeting will take place at the above hotel on Monday evening, March 13th, at eight o'clock. Mr. Arthur Veitch has kindly consented to preside.

— **THE ROYAL HORTICULTURAL SOCIETY** will hold a grand flower Show in the Agricultural Hall, London, on August 29th to September 1st next, when it is intended to make special awards for heating apparatus and appliances that are practically tested in the building. These awards will prove of the greatest value in promoting trade, and the action of the R.H.S. in insisting that the awards shall alone be for demonstrated and proved merit should commend itself to general exhibition authorities.

— **FLOWER SHOWS AT THE CRYSTAL PALACE.**—The dates of the Shows to be held at the Crystal Palace during the current year are as follows:—The spring Exhibition of plants and flowers will be on Saturday, March 25th, and the Great Summer Exhibition on Wednesday and Thursday, May 10th and 11th. The National Rose Society's Exhibition is fixed for Saturday, July 1st, and the National Dahlia Society's Show will be held on Friday and Saturday, September 1st and 2nd. November 3rd and 4th are the dates of the grand Chrysanthemum Exhibition.

— **LYCHNIS CHALCEDONICA.**—Mr. S. Arnott (page 106) rightly says much in favour of the double form of this perennial. I should like to add a word in reference to the common form as a border plant. In cottage gardens it is much grown and appreciated, and goes under the name of "Scarlet Lightning." In strong soil it will reach 4 feet in height and give abundance of its showy flowers. Unlike many other hardy plants, it is easy to keep in its proper position in the border. By the aid of a fairly stout stake compact plants are assured, and with but little trouble in the matter of tying.—E. M.

— **COST OF MANURING FRUIT TREES.**—If you have not closed discussion on manures, will you allow me to say, speaking from considerable experience, that if a fruit garden is in a good condition an expenditure of from £1 to £1 10s. per acre every year in artificial manures will keep it so? I have always used Lawe's guano at about the rate of 2 cwt. per acre as a minimum, using rather more after a heavy crop. I have applied it at times varying from early February to late April, but prefer the former date. In conclusion, I would say young fruit trees planted in properly prepared ground need no manure for the first few years, and at all times it is possible to use too much.—Y. [Our correspondent is a highly successful cultivator—one who really makes fruit-growing pay in a district where the natural conditions are far from being of the most encouraging nature.]



— **BEAUTIFUL PRIMULAS.**—A box of Primulas arrive from Messrs. James Veitch & Sons only just in time for brief acknowledgement. The blooms are distinctly beautiful. Chelsea Scarlet, glowing in its richness; Chelsea Rose, large and charmingly tinted; Fern-leaved White and Chelsea White, large and pure; Chelsea Red, dense reddish purple; and the Double Rose, Crimson and White, are of first-class character. Chelsea Blue is also included in the high meritorious collection of massive flowers which represent superiority both in strain and cultivation.

— **GIFT OF RARE AND VALUABLE BOOKS.**—Mr. Thomas Hanbury, F.L.S., of La Mortola, Italy, has presented to Kew a selection of about thirty volumes, in memory of his brother, the late Daniel Hanbury, F.R.S. (part of whose library they formed), an accomplished botanist, who successfully devoted himself to the investigation of the sources of vegetable drugs. He published, in conjunction with Prof. Flückiger of Strassburg, "Pharmacographia," which will long remain the standard and classical authority on the history of drugs. The portion of his library now acquired by Kew is of especial interest as having been used by him in the preparation of his book. Most of the books treat of economic or medical botany, and several of them are of very early date. A fifteenth century translation of an Arabian author (Serapion) on medical plants, the *Kew Bulletin* says, is of special value.

— **BRITISH FUNGUS FLORA.**—Mr. G. Massee has published the first volume of a new synopsis of all the fungi hitherto detected in Great Britain. This volume, says the *Kew Bulletin*, contains the first part of the Basidiomycetes, including the genera Lycoperdon, Boletus and Polyporus, and the Agaricineæ. It is wholly in English, and, in addition to the description, critical notes by various authors are given under many of the species. Spore measurements are given of all the types or authentic species in the Kew Herbarium. It is twenty-one years since a complete British Mycological Flora was published—namely, Cooke's "Handbook," and during that period the number of known British fungi has been nearly doubled. That work contained 2810 species, and Mr. Massee estimates the present number at 4895, so that a new work is very much needed. In fact, students of mycology in this country have been at a standstill from the want of a complete synopsis.

— **THE WITCH HAZELS.**—During the dull days of winter, when most of our hardy shrubs are at rest, it is quite cheering to see a group of these charming plants covered with their beautiful bright yellow blossoms. Hamamelis virginica is the best known, though it is not grown so extensively as its good qualities warrant. In addition to being a valuable winter-flowering shrub, the foliage assumes some most pleasing tints during autumn. H. arborea and H. japonica are well worth growing in every shrubbery. H. arborea is perhaps the best of the three, as it produces the largest foliage and finest flowers, and occasionally attains a height of 15 feet; it is, however, rarely cultivated in private places. All are of easy cultivation. They rejoice in a good, light, moist loam, but may be grown and flowered well in a much inferior soil. Propagation is generally effected by means of layers, though the two latter species are sometimes grafted on stocks of the former.—**CORNUS.**

— **CLOSELY STOPPING VINE LATERALS.**—Does Mr. Iggulden think his a fair test of the supposed benefits attending the closely stopping of Vine laterals? and is he prepared to stop the whole of the laterals on his Vines another season? If not, why not? He appears to have only experimented on one or two laterals to a Vine. Would not the length of the other laterals assist greatly in supporting the Vines and fruit, and does the size of a bunch and its general finish depend only on the leaves of the fruit-bearing laterals? All these are questions which require consideration. His experiments so far I do not consider at all conclusive. Certainly, a few well developed leaves are better than a greater number of weak and attenuated ones; but the practice where the rods are disposed 3 feet apart and the fruit-bearing laterals stopped two leaves beyond the bunch, and others from non-fruiting laterals encouraged to fill up any vacant space with good but not crowded leaves, I find always result in good Grapes. If Mr. Iggulden's views were adopted rigidly the rods need only be 2 feet apart, and if the bunches produced are of good size both in bunch and berry, and also well finished, the weight of Grapes should be much greater than is the case in the majority of vineries at present.—**A. YOUNG.**

— **APPLE WYKEN PIPPIN.**—The village of Wyken, Warwickshire, is famed for the well-known Wyken Pippin, an Apple of most delicious flavour, and marked with the familiar black speck. Here it was first grown, the original tree having been brought from Holland by Admiral Craven, and planted at the manor house, which was formerly part of the ancient residence of the Craven family. The Apple trees may be seen growing in nearly all the local gardens and orchards; but most of them are exceedingly old, and no effort seems to be made to perpetuate the variety. Vegetarians may, therefore, turn their attention to the vicinity with profit.—(*Birmingham Weekly Mercury.*)

— **LEEDS PAXTON SOCIETY.**—The seventh annual dinner of the Leeds Paxton Society took place on Wednesday evening, February 8th, at the Nag's Head Hotel, Leeds, when nearly seventy sat down to a very liberal spread. The usual loyal toast, proposed by the President (Mr. Fuller), being duly honoured, the Secretary (Mr. G. Cooper) read the annual report. During the year twenty-three papers have been read, the average attendance being twenty-four. The Chrysanthemum Show connected with the Society held in November was a success both in quality and number of exhibits, also financially, there being upwards of £15 added to the balance. Various other toasts followed. Mr. Hallbrook proposed "The Essayists," responded to by Mr. Campbell, who had given several instructive essays on hardy fruit culture. Altogether the evening was very enjoyable and a credit to the Leeds Paxton Society, which seems to be awakening into renewed vigour.

— **THE BIRMINGHAM AND DISTRICT AMATEUR GARDENERS' ASSOCIATION.**—This new Association has, we are informed, made a good start, and promises to become as successful as its promoters desire. Its objects are indicated in one of the rules:—"The Association is formed for the promotion and advancement of the science and practice of horticulture among amateurs by the holding of periodical meetings for the purpose of giving lectures or reading essays, and exhibiting the products and requisites of the gardens of members, and for the discussion of subjects pertaining thereto; also for the awarding of points to members for their exhibits. To watch and promote the interests of amateur gardeners generally, and to secure their proper representation on all important societies; also to afford facilities for the interchange of plants, cuttings, and seeds, and to promote the extension of allotment holdings." Mr. Alderman William White is President for the year, and Mr. W. B. Griffin, Derwent House, Moseley Road, Honorary Secretary.

— **ARE WEED KILLERS DANGEROUS?**—My answer to "T. W.," page 72, *Journal of Horticulture*, January 26th, is—I think not. We have a large aviary, in which about a hundred, more or less, of gold and silver pheasants have the run. There are about 300 yards run of walks in the aviary. I dressed these last summer with a weed killer without an accident to any of the birds, so I think it may be assumed it is safe to use with ordinary care; but I wish it to be understood that the walks were protected with fish nets raised about a foot above them by means of stout wire benders stuck in the ground; the net was stretched well over and pegged down on the grass, and was kept on from two to three weeks, during which time we had some heavy rain, that washed and cleansed the surface of the walks. We were careful to clear away any worms coming to the surface of the walks before putting on the net. The birds were continually running over the net, but they took no harm whatever.—**W. SALCOMBE, The Vineyard Gardens, Ticehurst, Sussex.**

— **PEACH BUDS DROPPING.**—It does seem as if there were some sorts of Peaches, notwithstanding the necessary precautions, that will drop their first flower buds when forced early, and yet this trouble is never met with outdoors. When I looked in on Mr. J. Dean, the gardener at Titsey Place, the other day, I found that he was starting his earliest Peach house. The flowers were just bursting. I asked if he were troubled with bud dropping, but he replied, No. He said, "We do not force too strongly at the first, rather we give such a gentle warmth that the roots and buds move together. Too often the heat at first is fierce, hence the earliest buds fall because there has been no commensurate root-action, and if the smaller side buds are saved it is because by the time they open the roots are active, then we give plenty of water in the autumn. Some growers cease to water when the fruits ripen, and then keep the roots rather dry to help to get off the foliage, hence the borders are never thoroughly moist during the winter in the same way that borders outdoors are." These seem to be, in his estimation the chief causes of early bloom buds on Peaches dropping.—**A. D.**



— ROYAL HORTICULTURAL SOCIETY'S JOURNAL.—Parts 2 and 3 of vol. xv., just issued, of the Royal Horticultural Society contains, as usual, much useful information. Apart from a report of the conferences on Begonias, Apricots, and Plums held at Chiswick last summer, the papers and lectures given at the Drill Hall during the year are embodied in the volume. The subjects dealt with are enumerated in the Council's report read at the annual general meeting on Tuesday, and published elsewhere in this issue, so other than saying that the papers are thoroughly practical and interesting, further reference would be superfluous. The volume comprises nearly 500 pages, and is illustrated. The reports of the committee meetings and descriptions of the plants, flowers, fruit and vegetables certificated during the past year, together with a good index, add interest and utility to the work. Its price to non-Fellows of the Society is 7s. 6d., and it can be obtained from the Society's offices, 117, Victoria Street, S.W.

— GARDENERS' ASSOCIATIONS AND SITUATIONS.—A very curious case occurred the other day at Kingston in relation to the connection of gardeners' associations and the finding of situations for gardeners out of place. A sub-Committee had been appointed at a meeting of gardeners held to consider the formation of an Association for the district, and this Committee met for the purpose. They were nearly at the conclusion of their evening's labours, dealing with a suggestion taken from the rules of the Reading Gardeners' Association, "that members out of place should have permission to make their wants known at any ordinary meeting," when one of the Committee remarked, "Why, I know of a place open now," and a second said the same. At the same time two gardeners wanting situations were mentioned, and it was agreed to give these men the needful information at once. This fact serves to show how very useful gardeners' associations might be made in helping members or others when wanting situations.—D.

— CRAFTY EXHIBITORS.—In the *Journal of Horticulture*, page 92, a correspondent mentions a delicate question with respect to an exhibitor gaining a prize for Roses, the said exhibitor not having any Rose trees in his garden. I do not think a visit on the show day would be wise, for the inspectors or judges might find Rose bushes in the exhibitor's garden. Why not appoint two or three of the Committeemen to inspect would-be exhibitors' gardens from three to ten days before the show? It is useless to think of sending only one person, particularly in the locality of the Crays. I have had a little experience of that kind there. The Society that I was connected with had a similar case to that mentioned on page 92. An exhibitor gained a first prize for Apples, although he had not any Apples in his garden. A year or two ago at the same place a would-be exhibitor was short of good Carrots for his collection of vegetables, so he purchased some to make up the deficiency; he was told that everything he had in his garden was made a note of, so he did not put in an appearance at the show.—HESSEWOOD.

— CYCLAMENS, PRIMULAS, AND VIOLETS.—I herewith send you blooms and foliage of the above flowers for your inspection. The Cyclamens and Primulas are making a fine show at the present time. The former carry about four dozen expanded flowers on each plant in 6-inch pots, with a large number of buds to open yet. The plants were raised from seed sown about eighteen months ago. The Primulas are not so fine as they were a week or so ago, but plants in 5-inch pots are 15 inches through, with four to six large trusses of flowers thrown well above the foliage. The Primula blooms represent Sutton's Giant Crimson, Purity, and Reading Blue. The Cyclamens, too, are Messrs. Sutton's strain. The Violets are Marie Louise, grown in cold frames, and they have flowered well this winter. I shall be glad of your opinion of the flowers sent.—J. HAWKES, *Lillingstone House, Buckingham*. [The flowers arrived in good condition, and not only exhibited evidence of cultural skill, but general excellence of the strains, the Cyclamens and Primulas being very fine. The Violets were also large and delightfully fragrant.]

### BRUSSELS SPROUTS.

IN a recent number of the *Journal of Horticulture* (page 66), I read "Brassica's" article on Brussels Sprouts and their culture, a subject I am interested in, having for a number of years back given special attention to the cultivation of this most useful winter vegetable. In his closing paragraph your correspondent mentions two varieties that he has been successful with, and one of these he calls Craig's Favourite, of Scotch origin. I take it for granted that this variety is the one raised over twenty years ago at Craig Gardens, near Montrose, Forfarshire, by

Mr. Alexander Muir, the then much-respected gardener, now retired, and his place filled by one of his sons. I procured seed of this Sprout from the raiser twenty years ago, and grew the variety most successfully at Keithock, in the same county. I have also grown it here along with London Market, Aigburth, and others, all excellent forms; but to a certain extent the plants lacked the uniformity of the Craig variety as to height and general productiveness, but the characteristics of the latter may have resulted from the seed being saved with special care. The plan adopted every season was to look the plants over, and select the best as to height and uniformity of sprouts. These were planted by themselves in the spring to produce seed, and this done year after year perpetuates a high-class variety. The same course adopted with any other vegetable will give truer seed than it is possible to obtain when many varieties are seeded together. The Aigburth and London Market I have crossed, but the result gave plants taller than others, and looser in the sprouts; but by perseverance this difficulty might in time be overcome.

I cannot understand why it is advised to sow Brussels Sprouts in a frame. Plants raised under glass have never the same hardy constitution that those have raised in the open ground. For many years I have raised my plants by sowing the seed in February in a warm border, the ground being well prepared, levelled, and raked, the seed sown very thinly, broadcast, and raked in. A good dressing of burnt ashes or potting-shed refuse is given, and then some fine leaf mould spread on the surface, which lies open, and the frost does not take the same hold of it, should it come, as in the case of closer soil. The seed being sown thinly the plants are sturdy and lift with fine masses of small roots; very different from long tap roots, the result of thick sowing.

To have really good sprouts the ground should be deeply cultivated and be in good heart, and the plants put in 2½ feet asunder towards the end of May or the first week in June and well watched. If kept clean the crops will repay the care bestowed.—A. KEMP, *Coolhurst, Horsham, Sussex*.

### NEW VIOLAS.

THE autumn of 1892 and spring of 1893 brings a goodly addition of new varieties, many of which I have seen, and am able to send you a few notes respecting them. First, I notice with pleasure that the florists of Scotland are now devoting more attention to the Viola than previously. There is a rapidly increasing demand for the lovely varieties of this popular plant, and new varieties of sterling merit are sought after. Messrs. Dobbie & Co. of Rothesay have been foremost in late years in growing a collection, and in producing fine varieties. They are now sending out twelve new sorts, and of these I have seen Laverock, an improved Skylark, a charming variety; Rob Roy, an improved Vernon Lee, very pretty; and Sylvia, a fine white, raised by Dr. Stuart of Chirnside.

Mr. Andrew Irvine, Tighnabruach, is introducing twenty-six new varieties, and he has secured the stock of Golden Flake, a lovely yellow; and Morning Dawn. These two fine varieties were raised by Mr. J. D. Stuart of Belfast, who is devoting great attention to Violas and Pansies. Another Belfast amateur, Mr. Samuel McKee, is also introducing some very fine seedling Violas through Mr. Irvine, who is sending out Comet; Countess, extra fine; Duchess, a beautiful variety; Magnet, a grand acquisition, so rich in colour and good in form; and Mars and Pearl. All these I have seen, and can recommend them. Mr. Irvine also sends out two of Mr. Frater's raising—Mrs. Hay and Peggy Smith.

Mr. S. Pye, of Cathwall, is sending out eleven new varieties, but as I have not seen any of them I am unable to speak about their merits. In addition he is introducing twelve new varieties of the Sylvia type, raised by Dr. Stuart of Chirnside, who is also the originator of the Violetta section. I have not seen Sylvia and its companion varieties in a growing state, only as blooms sent to me by Dr. Stuart, and these bore a resemblance to Countess of Hopetoun in form and colour. I was, moreover, led to suppose they partook of the excellent compact habit of the Countess of Hopetoun. Of these, Blue Gown, Bridal Wreath, Picotee, Sweet Lavender, and Sylvia, which I have seen, I can mention as acquisitions. Dr. Stuart is also sending out, through other florists, some varieties of the Violetta strain, very dwarf in habit, and with small well formed deliciously fragrant flowers, many of which I have seen, and amongst them Marginata and Summer Cloud are particularly pretty. Mr. George Steel, of Heatherslaw, is also devoting attention to seedling Violas, especially of the Violetta section, and his new varieties, Mrs. Joseph Oliver, Maggie Steel, Mrs. Stephens, Mrs. George Findlay, and Jeannie Turnbull, are all very pretty and fragrant. His lovely pure self-yellow Viola Beauty of Heatherslaw is also a welcome acquisition.

Some very fine seedling varieties of Violas raised by Mr. J. D. Stuart and Mr. McKee and others, I have seen, but they will not be introduced until next autumn, and these are in the hands of Mr. Irvine, who is also the possessor of the entire stock of Duke of Clarence, a very fine dark self. This variety was awarded a certificate at the Midland Counties Pansy Society.

Some beautiful acquisitions have very recently been made in Annie King, Bridesmaid, Colleen Bawn, Golden Gem, H. W. Stuart, Mary Gray, Master of Arts, Mrs. Frater, Gaiety, Princess Beatrice, Dorothy Tennant, Duchess of Fife, Beauty, H. M. Stanley, Lady Amory, Quaker Maid, Mrs. Charles Turner, Queen of Scots, Star, Sunlight, Sunrise, Wonder, and William Neil.—WILLIAM DEAN.





JOHN H. TAYLOR.

THIS variety is described by Mr. John Thorpe in the *Chrysanthemum* number of the "American Florist," November, 1892, as an early variety, and specially marked as such, not late. Amongst the best late varieties mentioned in "American Gardening" this variety is omitted by Mr. John H. Taylor. I attribute its lateness of flowering to late importation.—IMPORTER.

#### FAVERSHAM AND DISTRICT CHRYSANTHEMUM ASSOCIATION.

KNOWING the wide circulation your paper possesses I beg to inform you that this Association at a committee meeting held on the 10th inst. took steps to modify the conditions of their "Kent County Competition," referred to on page 116. They do not, however, see their way to do without the Reflexed varieties entirely, so have modified it thus—twelve blooms each Japanese and Incurved, distinct, and twelve Reflexed of not less than nine varieties.—C. E. CLINCH.

#### NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the General Committee was held on Monday last at Anderton's Hotel, Fleet Street. Mr. R. Ballantine occupied the chair, being supported by an excellent attendance of members and officials.

The minutes of the former meeting being disposed of, Mr. R. Dean (the Secretary) announced that Sir Edwin Saunders could not conveniently preside at the annual general meeting, and it was thereupon moved by the Chairman that one of the Vice-Presidents be asked to fulfil that duty. Mr. H. R. Williams of Hornsey will probably be the one to undertake it.

The sum of 2 guineas was voted to the Beanfeast Fund of the employés of the Royal Aquarium in accordance with the usual custom, and a letter from the Secretary of the Aquarium Company was read confirming the fixtures for the current year's exhibitions.

The Secretary presented a rough sketch of the annual report, which was approved, and will be laid before the members at the annual meeting next Monday. From the Secretary's statement it would appear that a balance will remain in hand far exceeding that of previous years.

The following Societies were admitted in affiliation:—Dalkey, Killiney, and Glenageary Chrysanthemum Society, the Rugby Society, and the East London Amateur Chrysanthemum Society, and fifteen new members were elected.

Mr. Earland, whose frozen blooms were awarded a medal last autumn, in acknowledging its receipt, referred to his work in that colony, and his expectations of New Zealand saved seed producing a very high percentage of good double flowers. He also promised to send over a further instalment at no distant date. It was mentioned that the cash subscribed to the special prize fund for 1893 now amounted to upwards of £128, in addition to which were several important special prizes of medals offered by Mr. Jukes, and a cup by Major Collis Browne. The affiliation scheme appears to be bearing good fruit, for at the present time there are exactly 100 Chrysanthemum and Horticultural Societies at home and abroad on the list.

Mr. Jukes, in calling attention to the annual meeting, reminded the members that there would probably be a large attendance and a good deal of business to be done. He hoped the Committee, who were really the working members of the Society, would all be present, and that country members would likewise muster in good numbers.

#### INCREASED SIZE OF STANDS.

"SADOC" (page 116) fears I do not realise the full benefits that would accrue from the use of a larger board. He then goes on to give a reason that is almost an echo of a case in point I made (page 76), and that "S." so ably dealt with (page 96) namely—that if a larger board was made "compulsory" the judges would be able to arrive at an accurate estimate of the merits of each particular stand with ease, and that without doing the amount of damage that is now so often a prominent feature of our shows. It is in the word "compulsory" that the gist of it all lies; without it, there is, and ever will be, as "D." puts it, "chaos."

What sane man, who has the welfare and improvement of the Chrysanthemum at heart, would dream of proposing an optional decrease in the size of stands for incurved blooms on the score of the present size board being too large for some of the growers of smaller blooms? Yet that is what the question of an "optional" increase in the size of stands for Japanese resolves itself into. Moreover, the problem will become more and more difficult of solution each year, for England has far from reached the zenith of her fame in giant Chrysanthemum raising; in fact, she has only just awoke to the importance of it, and we may rest assured it will not be "as you were" when she has had her fling.

My suggestion is, that where societies find their tabling space limited they should institute smaller classes, and ask for all distinct; for instance, "thirty-six Japanese distinct," would be equally or more

representative than forty-eight with duplicates allowed. Or in the case of smaller classes, "eighteen distinct" against twenty-four with duplicates. There would then be no extra tabling needed.—H. BROWN, *Beaurepaire*.

#### SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE annual dinner of the Sheffield Chrysanthemum Society took place at the Clarence Hotel, High Street, on February 8th. About sixty members, delegates, and friends were present. Mr. John Haigh occupied the chair, supported by Mr. B. G. Simpson as Vice-President, Mr. W. Housley (Secretary), Mr. H. Broomhead (Treasurer), Mr. J. G. Newsham, Mr. H. C. Robinson, Mr. R. H. Laughton, and others. Delegates were present from Wakefield, Leeds, Barnsley, and Rotherham, also from local horticultural societies. Letters of apology were received from C. E. Jeffcock, Esq., the President, Mark Firth, Esq., ex-President, the Mayor (Ald. Batty Langley), and G. Senior, Esq.

On the conclusion of an excellent repast, the toast of "The Queen and Royal Family" was proposed by the Chairman, who took the opportunity to refer to the honour conferred by the Queen in raising Sheffield to the status and dignity of a city. The toast was drunk with enthusiasm. The toast of the "Chrysanthemum Society" was proposed by Mr. J. Smith of Rotherham, who congratulated the members on the excellent show held in November, and stating that they in Rotherham were endeavouring to imitate them.

The Chairman acknowledged the toast, and spoke of the advance made in the cultivation of Chrysanthemums. Progress was still going on in the size and quality of blooms which could be produced. Some of the leading authorities had found it necessary to increase the size of the exhibition boards. The aim of the Society was to make their exhibition a credit to the city and a powerful means of spreading instruction and interest in the growth of Chrysanthemums. So long as the public upheld them, as they appeared to be doing, the members of the Society would be willing to cater for their benefit and delight.

"The Visitors and Kindred Societies" was proposed by Mr. Housley and responded to by Mr. Taylor (Rotherham Society), and Mr. R. H. Laughton (Walkley Society).

#### HAIRY CHRYSANTHEMUMS.

THE short note by "Sadoc" in the *Journal* for the 26th ult. (page 76) reminds me of the very decided tendency on the part of seedling growers to keep the ball rolling in whatever direction the Chrysanthemum may take. The latest departure in new Chrysanthemums is certainly the development of hairy-petalled varieties, and if the demand for them be at all worthy of attention we may be sure that large numbers of novelties in this new section will be forthcoming. The pliability of the Chrysanthemum is one of the chief reasons of its present popularity, for it seems we have only to ask for what we want, and in a season or two the want is supplied by ingenious florists either in Europe or America.

Five years ago Mrs. Alpheus Hardy was first announced in the American press, and a wonderful, though perhaps undeserved, stir it made. Louis Boehmer followed, then W. A. Manda and H. Ballantine. Last season *Enfant des Deux Mondes* was put into commerce by a Continental grower, and I may remind "Sadoc" that it is because this is a variety raised in France that it bears a foreign name. We can hardly expect French florists to give purely English names to their gains any more than the French can expect us to give French names to our new seedlings.

A Belgian correspondent, in a recent letter, informs me that he has raised from seed imported from the Imperial Gardens at Tokio a hairy variety of the Louis Boehmer type, but of a deep crimson colour, without, however, mentioning the name he intends to give to it. There is also a blush sport, which I have not yet seen, from Louis Boehmer called William Falconer, and at Camberwell there is another of the same parentage bearing the name Queen of the Hirsutes, and this is described as a ruby crimson coloured flower. I saw a bloom some time since; but it was one from a lateral growth, and was lighter than I should describe as ruby crimson. Crimson-amaranth seemed to me to be more appropriate; but verbal descriptions of colours in flowers are always open to question.

In an American catalogue recently to hand I observe a new yellow hairy variety called Zambesi, which does not yet appear to have made its way to this side of the Atlantic. It is reported to be an American seedling not synonymous with W. A. Manda, partaking of W. H. Lincoln in colour, with foliage resembling Mrs. Alpheus Hardy.

A further addition is promised from M. de Reydellet this year. Mdme. Ferdinand Cayeux, a pomegranate red, also raised from Louis Boehmer, was described by M. Godefroy Lebeuf in a recent issue of *Le Jardin*. M. Simon Delaux, the indefatigable raiser in the south of France, announces the distribution of several others this spring, so that the lovers of this new class of Chrysanthemum will soon be in a position to set up a good representative board of hairy varieties. Synonyms already look like being multiplied in this new class, for two of them have by some means acquired a second name.

Although the original variety came from Japan the hairy section appears to be limited in that country. A Japanese catalogue received last spring contains the names of only six varieties in cultivation there, and most of those can be approximately identified with the kinds now commonly cultivated in England.

It does not appear that the tendency to hairiness is inherent, for a correspondent in the States tells me that out of thirty seedlings raised from Mrs. Alpheus Hardy a few seasons since not one showed the least sign of that peculiarity.—C. H. P.



## CHRYSANTHEMUM NEW YEAR'S GIFT.

As a late flowering Chrysanthemum New Year's Gift is a decided acquisition, and will no doubt become a popular variety. Blooms of it

fine bloom from Mr. Owen during the first part of the current month, and from this specimen the engraving (fig. 25) has been prepared. The flower, as will be seen by referring to the illustration, is large, rather



FIG. 25.—JAPANESE CHRYSANTHEMUM, NEW YEAR'S GIFT.

were shown by Mr. R. Owen, Castle Hill Nursery, Maidenhead, at the Drill Hall on January 17th, and the Floral Committee of the Royal Horticultural Society adjudged an award of merit. As further corroborating its value as a late-flowering variety we received a wonderfully

flat, with broad florets, which are white. The variety is an English raised seedling of the Japanese section, and is said to be an excellent grower. For decorative purposes at this late period the blooms are most valuable.



## ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 14TH.

## THE COMMITTEES.

DULL, wet weather unfortunately prevailed on the occasion of the annual meeting, and this was to be regretted on account of the Exhibition alone, which was a bright, well varied, and beautiful one.

**FRUIT COMMITTEE.**—Present: Philip Crowley, Esq., in the chair, with Messrs. John Lee, T. F. Rivers, J. McIndoe, A. H. Pearson, A. Moss, Arthur Veitch, J. Cheal, W. Warren, T. J. Saltmarsh, A. Dean, A. J. Laing, G. Reynolds, W. Bates, G. Wythes, F. Q. Lane, H. Balderson, J. Smith, G. Norman, and J. Wright.

Specimens of Chou de Bedford from Mr. T. Laxton were placed on the table, this variety of the Portugal Cabbage being a cross between Couve Tronchuda and Chou de Burghley. They had a more general resemblance to the former than the latter. It was suggested that the variety be grown at Chiswick for testing in a cooked state.

A dish of Witloof was sent from Chiswick, crisp heads, esteemed for salading as well as in a cooked state.

Mr. G. Miller, The Gardens, Ruxley Lodge, Esher, sent a dish of Mushrooms (vote of thanks). Mr. S. Hardy, Ash House, Parsons Green, Fulham, sent large baskets of splendid Mushrooms as packed for market; very fine samples (cultural commendation).

A box of Peaches, imported from the Cape, was exhibited by P. A. Molteno, Esq. The fruits were small, but attractive in appearance, yet distinctly inferior in quality. They bore no comparison with our home-grown fruits, but these cannot be had in February (vote of thanks).

Mr. W. Roupell sent six varieties of Apples grown in his suburban garden at Streatham. They were all good, Newton Wonder being especially firm and fine (cultural commendation). Mr. W. H. Bannister, The Gardens, Cote House, Westbury-on-Trym, sent fruits of Standard Bearer Apple, a symmetrical oval-shaped fruit, tender in flesh and of good quality. An award of merit was granted by ten votes against six. Mr. R. Maher, Yattendon Gardens, sent bottles of jelly from Dumelow's Seedling and an unnamed local variety of Apple, but both samples were overpoured with sugar, which obscured the flavour of the fruit. Handsome fruits of Nancy Jackson Apple were placed on the table by Mr. Rivers; large, symmetrical, striped, and tender. Mr. McIndoe referred to the variety as the "coming Apple in the north." Rivers' Codlin Apple, certificated in October, was exhibited to show its keeping properties. The Reinette Dorée Apple was also placed on the table, a smallish, attractive, and tender fruit. Very fine specimens of Passe Crasanne Pear were cut and found excellent (vote of thanks). Messrs. Cheal and Son had a very extensive and imposing display of Apples on the side table, comprising 106 dishes of the leading varieties, well kept and well coloured. Amongst them was a dish of the new dessert Apple Armorer. It was raised by Mr. C. Ross, received an award of merit in 1890, and a first-class certificate in 1892. The fruit is small, russety, tender, also sprightly and agreeably flavoured; decidedly a good late dessert Apple that will probably make its way in the world. A silver-gilt Knightian medal was recommended for the collection. A similar honour was conferred for sixty dishes of Apples arranged by Mr. G. W. Cummins from the gardens of A. H. Smee, Esq., Hackbridge; remarkably clear, good, and well kept fruit. As the produce of a private garden the Committee thought the collection quite as meritorious as the larger one above referred to and hence the recommendation.

Wholly different from the above was the collection of fruit from Mr. Rivers. It included a dozen varieties of Oranges, fine, clear, ripe fruit, the St. Michael's being represented by seven large fruits in a cluster. Wadhurst Pippin Apple was splendidly shown, huge symmetrical striped fruit, grown in pots plunged in the open ground. Cox's Orange Pippin was exceptionally fine, and King of Tomkins County very good. A new Apple, Jacquin, was highly distinct by its waxy yellow appearance and remarkable firmness. This Apple should be cut and its quality tested at a subsequent meeting. In this collection large fruits of "Jupp's Surprise" were noticeable, that being the name under which the Apple was received from New Zealand, but Mr. Rivers correctly named it Bismarck, a fact worthy of record in view of possible future contingencies, for growers who have Bismarck may be satisfied without adding Jupp's Surprise, if it should find its way into commerce under this name. A silver-gilt Knightian medal was recommended for the collection.

**FLORAL COMMITTEE.**—Present: W. Marshall, Esq. (in the chair); Rev. H. H. D'Ombain, Messrs. H. Herbst, Robt. Owen, Owen Thomas, George Stevens, Chas. F. Druery, Walter Furze, John Jennings, Frank Ross, Chas. Jefferies, William Bain, C. J. Salter, T. Baines, Peter Barr, Chas. E. Shea, Chas. Noble, J. D. Pawle, George Paul, W. H. Williams, H. B. May, H. Turner, Geo. Nicholson, John Fraser, Ed. Mawley, and George Gordon.

Messrs. E. D. Shuttleworth & Co., Albert Nurseries, Peckham Rye, S.E., staged a very fine group of foliage and flowering plants, including Crotons, Dracænas, Azaleas, and Palms, and a number of Narcissi, which, for the time of year, were magnificent. Particularly prominent were bunches of Emperor, Henry Irving, Ard Righ, Countess of Annesley, Rugilobus, and obvallaris. A bronze Flora medal was recommended for this exhibit.

From the Hon. P. C. Glyn, Rook's Nest, Godstone (gardener, Mr. Friend), came some charming blooms of Camellias and a large Acacia dealbata, profusely flowered and deliciously scented (bronze Flora medal). Messrs. William Outbush & Son, Highgate, showed a group of Erica Wilmoreana, the plants being finely grown and excellently flowered (vote of thanks). From the same firm also came a collection

of Dracænas, conspicuous amongst which were D. Mrs. Fieake, D. Bella, D. angustifolia, D. superba, D. elegantissima, and D. vivicans (vote of thanks). A group of Chrysanthemum Golden Gem was shown by Mr. Mortimer, Swiss Nursery, Rowledge, Farnham, the flowers of which are of a lovely shade of yellow (vote of thanks). Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, showed a basket of Miss Joliffe Carnation (vote of thanks). Some very fine Amaryllises were sent by Mr. Perkins, gardener to the Viscountess Hambledon, Greenlands, Henley-on-Thames. The collection included amongst others the Hon. W. F. D. Smith, which was recommended an award of merit (see below), Viscountess Hambledon, and the Hon. Miss Smith.

A collection of Cyclamens was exhibited by Mr. Chas. Turner, Royal Nurseries, Slough. The plants were well grown and admirably flowered (bronze Banksian medal). Messrs. Hugh Low & Co., Bush Hill Park Nurseries, Enfield, staged a fine collection of New Holland plants, the most conspicuous amongst which were the sweetly scented Boronia megastigma, Diosma capitata, Acacia Drummondii, A. rotundifolia, A. armata, A. cordata, Erica melanthera, Chorozema Lowi, Correa cardinalis, Pimelea spectabilis, and Genista fragrans (silver-gilt Banksian medal).

Messrs. Paul & Son, The Old Nurseries, Cheshunt, sent some splendidly flowered plants of Lilacs, the white varieties being particularly fine. A group of Cœlogynes and some well-flowered plants of Lachenalias in variety were also sent by the same firm. The Lilacs shown by Messrs. Paul & Son were alba grandiflora, Marie Legrange (fine), Madame Abel Chatenez (white), and Mathieu Dombasle (purple). Messrs. J. Laing & Son, The Nurseries, Forest Hill, sent a Clivia (Imantophyllum) Exquisite, very fine truss. A charming plant of Pandanus Baptisti was shown by Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea. Mr. R. Owen, Castle Hill Nursery, Maidenhead, sent very fine flowers of Chrysanthemum Beauty of Castle Hill (award of merit, see below), and also flowers of C. New Year's Gift, certainly one of the finest late whites, and illustrated on another page of this issue. Messrs. Garaway & Co., Durdham Down Nurseries, Clifton, Bristol, sent plants of Primula sinensis Garaway's White Perfection, the flowers and habit of which are excellent. Messrs. Robt. Veitch & Son, Exeter, sent two plants of the black Arum sanctum palestinum. They also sent a plant of Asparagus retrofractus arboreus—a fine variety.

**ORCHID COMMITTEE.**—Present: Dr. Masters (in the chair), Messrs. James O'Brien, C. Pilcher, T. W. Bond, E. Hill, Hugh Low, H. M. Pollett, W. H. White, Thos. Statter, E. Handley, T. B. Haywood, S. Cortauld, F. Sander, Jas. Douglas, Ed. Moon, and S. le Doux.

The display of Orchids was extensive and of much interest, the Committee having quite a busy time. Messrs. B. S. Williams & Son exhibited Cypripediums largely and well, the intermingling of a few other Orchids contributing diversity. Amongst the Cypripediums were Amesianum, Sallieri aureum, Measuresianum, Morganiae, Fitchianum, nitens, gemmiferum, vernixum, and Pitcherianum Williamsi, all very healthy and well grown plants. Cattleya Trianae alba, Oncidium splendidum, and Lycaste costata being amongst the other Orchids shown (silver Flora medal). Messrs. Pitcher & Manda contributed a diversified and charmingly arranged group, one of the most pleasing which they have set up. Cypripedium Rowallianum, C. Boxalli atratum, C. Barteli, and C. magniflorum were very noteworthy, as were Cattleya Percivaliana and C. Trianae delicata (silver Banksian medal). Messrs. Hugh Low and Co. contributed a beautiful collection of Phalaenopsis, which they grow splendidly. P. Stuartiana, P. leucorrhoda, P. amabilis, P. Stuartiana aurea, and P. Schilleriana vestilis were represented. The latter was awarded a first-class certificate, and is described below (silver Flora medal). Messrs. Paul & Son, The Old Nurseries, Cheshunt, had a beautiful display of Cœlogynes and Lilacs (silver Flora medal). The former comprised such varieties of cristata as maxima Lemoniana (Day's and Bockett's varieties) and alba. The plants were dwarf, compact, healthy, and full of bloom. Lord Foley, Ruxley Lodge, Esher (gardener, Mr. Miller), had a beautiful mixed group, comprising some finely grown Cœlogynes and Cypripediums, Phaius grandiflorus, and a number of stove and greenhouse plants (silver-gilt Flora medal).

Messrs. F. Sander & Co. had as usual an excellent group including many plants of special interest as well as a number of standard kinds. Arpophyllum spicatum, Lycaste Skinneri leucoglossa, Dendrobium × Sanderæ, D. Leechianum, D. nobile Amesiae, a superb variety of Lælia anceps named Schroderiana, Phalaenopsis Sanderiana, P. Stuartiana, Platyclives glumacea, and Cypripedium Exul were finely shown, together with the novelties referred to under certificates and awards (silver Floral medal). C. J. Lucas, Esq., Warnham Court (gardener, Mr. Duncan), had Dendrobium Wardianum album, Angræcum lyaloides, and Cattleya Warocqueana alba, Linden's variety. Sir Trevor Lawrence, Bart., sent Masdevallia Schroderiana, and Cypripedium concolor (award of merit, see below). From the Royal Botanic Gardens, Glasnevin, came Diurus maculata, Smith, Eria barbata, Rehb. f., and Epidendrum xanthenum, Lindl., the two first-named receiving botanical certificates. Messrs. James Veitch & Sons contributed Epidendrum × Endresio Wallisi, Cypripedium × Winnianum, and Phaius × amabilis. The two latter are referred to under certificates and awards. C. Winn, Esq., Birmingham, exhibited Cypripedium The Duke, a cross between C. barbatum grandiflorum (pollen parent) and C. Stonei. It is a striking and distinct flower. S. le Doux, Esq., sent a small but interesting collection, several of the members of which received awards of merit, and are described elsewhere (silver Banksian medal). Mr. J. Crispin, Fishponds, Bristol, received a bronze Banksian medal for an attractive collection of Cypripediums.



## CERTIFICATES AND AWARDS.

*Phalænopsis Schilleriana vestilis*, Rehb. f. (H. Low & Co.).—A lovely variety of Schilleriana, pure white, save for the yellow lip and for the orange-yellow spots around it. It is said to be the only plant in Europe (first-class certificate).

*Cattleya Trianae*, Hillingdon variety (W. Whiteley).—A very large and fine variety of the popular type, with satiny blush sepals and petals, and rich magenta lip; throat orange (award of merit).

*Dendrobium nobile Amesiae* (F. Sander & Co.).—A beautiful form, with white sepals and petals, and a rich maroon throat; very distinct and attractive (award of merit).

*Laelia hybrida Maynardi* (F. Sander & Co.).—A distinct bigeneric hybrid, obtained by crossing *Laelia pumila* Dayana (seed parent) with *Cattleya dolosa*. The long protuberant lip is rich carmine magenta, with purple flakes; sepals and petals rosy mauve (award of merit).

*Dendrobium Owenianum* (F. Sander & Co.).—A very fine hybrid, a cross between *D. Linawianum* majus (pollen parent) and a grand variety of *D. Wardianum*. While there is a resemblance to *Wardianum* in the flower, there is also distinctness, and the growth is different. The colouring is that of *Wardianum*, but the sepals and petals are more wavy and drooping (first-class certificate).

*Cypripedium Conco-Lawre* (Sir Trevor Lawrence).—This is a hybrid between *C. concolor* and *C. Lawrencianum*. It is very distinct, and peculiarly coloured. The dorsal sepal is beautifully grounded and, like the petals and lip, is greyish white veined with rose (award of merit).

*Cymbidium grandiflorum* (F. Ross & Co.).—A well flowered plant of this very distinct and beautiful *Cymbidium*. It bore six blooms. These are of great size. The sepals and petals are of a dull pea-green with brownish dots towards the base. The lip is white spotted with brown and margined with green (first-class certificate).

*Cypripedium* × *Winnianum* (J. Veitch & Sons).—A hybrid between *C. Druryi* (pollen parent) and *C. villosum*. It is a harmony in brown. The petals are deep brown on the upper part, lighter below, with a broad central stripe. They are blunt and incurving. The lip is light brown, and the dorsalsepal purplish brown edged with lemon and margined with white (award of merit).

*Phaius* × *amabilis* (J. Veitch & Sons).—A cross between *P. tuberosus* and *P. grandiflorus*. The lip is brownish-red shaded with purple, this extending into the throat. The sepals and petals are blush veined with light brown. It is a dwarf grower, and apparently a free bloomer (first-class certificate).

*Cattleya Trianae Florenee* (S. Le Doux, Esq.).—A very striking and beautiful form. The lip is of great length, soft satiny pink in hue, and the broad fringed lip rich purplish magenta, the throat yellow (award of merit).

*Mesospinidium vulcanum grandiflorum* (S. Le Doux, Esq.).—A plant bearing three flowering sprays of this bright little Orchid was shown. The flowers are of a bright rosy carmine, the leaves short and lanceolate (award of merit).

*Odontoglossum cirrhosum* Le Doux variety (S. Le Doux, Esq.).—A charming variety, the slender sepals and petals are thickly and evenly dotted with brown. It is of graceful habit and full of bloom (award of merit).

*Amaryllis The Hon. F. W. D. Smith* (Viscountess Hambledon).—A rich deep crimson shaded with purple, the segments broad and recurving (award of merit).

*Chrysanthemum Beauty of Castle Hill* (R. Owen).—A very fine and promising late Japanese, large and deep with slender incurving florets. The colour is pale yellow, deepening to bronze in the centre (award of merit).

*Apple Standard Bearer* (W. H. Bannister).—A symmetrical oval shaped Apple, tender in flesh, and of good quality (award of merit).

## ANNUAL MEETING.

THE annual general meeting of the Fellows of the Society was held on Tuesday afternoon in the Council Chamber, 117, Victoria Street, S.W. Sir Trevor Lawrence, Bart., President, occupied the chair. There was a very large attendance, the room being crowded to such an extent that many were unable to find seats.

The Secretary having read the minutes convening the meeting, forty-seven candidates were then proposed, and these duly elected. The appointment of scrutineers for the ballot of the Council followed, these being Messrs. J. Laing and A. Sutton.

Sir John Llewelyn, Bart., proposed a vote of thanks to the retiring members of the Council, Baron Schröder, Rev. W. Wilks, and N. N. Sherwood, Esq. In doing so, he said it was felt that none of these gentlemen had lost interest in the Society; indeed, they had expressed their desire that it should be recorded that the reverse was the case. Business matters, however, necessitated the retirement of Baron Schröder from the Council; but he would, they all knew, still continue to be deeply interested in the Society. He had, therefore, very much pleasure in moving the proposition. Mr. Harry Turner seconded the movement, and a vote of thanks was unanimously accorded.

Sir Trevor Lawrence, Bart., in moving the adoption of the report and financial statement, which were taken as read, remarked that in his opinion the Fellows of the Society and all interested in its work might congratulate themselves upon what had been accomplished during the past year. They had made steady progress, and this fact was set out in the report. One of the most important features was the great exhibition held in the Temple Gardens. This he regarded as being one of the most satisfactory flower shows that had ever been held. They were fortunate in the weather, and correspondingly fortunate in the

number of visitors. Regarding the work of the Society at Chiswick one could see by the report what had been done in this respect. The trial of a great variety of vegetables and flowers had been admirably carried out, as also had the evaporation of fruit. With the latter, however, he could not exactly agree, inasmuch as he considered evaporated fruit decidedly inferior to that in its natural condition. Reports had been received from Fellows who resided in the country, expressing themselves as being perfectly satisfied with what they obtained in return for their subscriptions. In previous years that had always been a great difficulty, but he thought it had been overcome, and success now achieved. The progress of the Society, too, as he had previously mentioned, continues to be satisfactory, and it was gratifying to know that already eighty-seven new Fellows had been elected this year. The numerical strength showed an increase of 206 new Fellows during the year, and a net increase of £278 5s. He would like to mention in reference to this that the Treasurer had calculated that for the ensuing year the income would be at least £4864, and the expenditure about £4535. If carried out this would leave a net profit of between £200 and £300. (Applause.) It would be noted that £386 had been spent in repairing the great vinery, but he was glad to say that, with the exception of two old structures, all the houses and buildings in the gardens at Chiswick were now in thorough repair. With regard to the scheme for examinations to secure Garden scholarships, that had given general satisfaction, and there was a prospect of a promise of assistance being given by the Government in such matters. Already seventy-two candidates had presented themselves for examination, and it was probable that there would be 400 or 500 before the year was out. It had been decided that the young men who succeeded in securing scholarships should work in Chiswick Gardens for the first year, and the second year in some good private garden, with the hope that they would develop into gardeners of first-class capacity. The Council was deeply indebted to the gentlemen who had read papers and given lectures at the periodical meetings, and an equally interesting syllabus had been prepared for the current year. There was one other matter he should like to mention briefly, and that was the question of life members. The Secretary, Treasurer, and himself had circulated a letter among the life members, and requesting them to become annual subscribers. Some thought such a step ought not to have been taken, but there were exceptions to the rule, and £41 had been received as annual subscriptions from former life members. Relative to the action in retaining the services of the Secretary as a salaried official the Council had acted strictly in accordance with the Charter. He could say that the Council felt the retirement of the Rev. W. Wilks would be a great blow to the Society, and that every effort should be made to retain his services. This, as they would hear, had been done. (Cheers.)

Professor Michael Foster, after the unanimous adoption of the report, rose to propose a resolution to the effect that the Rev. W. Wilks be re-elected as a paid secretary. Mr. Wilks, he said, was a secretary of no ordinary kind, and whether the Society regarded him for his business qualities, or for the great courtesy with which he treated all Fellows, it would be a difficult matter to meet with such a man. (Hear, hear.) Mr. Wilks was not only fond of gardening, but he had the interest of the Society at heart. About the time the South Kensington reign came to an end, it so happened that he had thought of Mr. Wilks, and in reference to him said, "that is the future secretary of the Royal Horticultural Society." He brought forward his name, and he might say that the progress of the Society—and they had made progress, although they had not yet removed from the Drill Hall, which might even yet be accomplished—was due to the exertions of Mr. Wilks. (Hear, hear.) It was therefore with much pleasure that he made the following proposition:—"That this meeting endorses the action of the Council in retaining the Rev. W. Wilks as paid Secretary of the Society, and resolves to insert a paragraph in the Charter authorising the adoption of the resolution." Mr. J. Hudson seconded the motion, which was carried unanimously.

The Rev. W. Wilks in returning thanks for the unanimous adoption of the resolution, said he was sure they would excuse him referring very briefly to the matter, inasmuch as he had only a few hours previously left his bed after suffering from a severe attack of influenza. He was almost sorry that the proposition had not, to some extent, been opposed, because it seemed to him that there must be someone connected with the Society who could fill the office of Secretary equally as well, or even better, than himself. (No, no.) Progress had been made, and since the Society removed from South Kensington there were not more than 200 or 250 Fellows of those days left. It seemed as if the old generation had passed away, and with it the South Kensington "Pleasure-garden policy." The new generation, as it were, had returned to the policy that the Society originally advocated, that is, assisting to make gardening not only a pleasure but a science, a skill, and a craft. There was not a Fellow who could not say that the Society had progressed; but mistakes had been made. It was almost impossible to accomplish years of work and progress without committing errors, but he would make an appeal, through the representatives of the gardening papers, that when any Fellows did find a mistake had been committed that they would write in a genial way direct to the Secretary, and point out the shortcoming. (Hear, hear.) It was no use writing to the newspapers making complaints; they should send to the fountain head. It was no part of the duties of a Secretary of such a Society as theirs to read the newspapers, and it sometimes happened that complaints made through this medium were overlooked. If the course he advised was adopted, he was sure the Council would meet the views of those who complained and endeavour to rectify matters. He would ask all present,



and others interested in the Society, to exert themselves and obtain new Fellows. All who like fruit, plants, and flowers should become connected with this Society, which for nearly a century had done so much good.

Sir Trevor Lawrence remarked that they were also indebted to Mr. John Weathers, the Assistant Secretary, who was most indefatigable, and always ready to do the work of the Society. He could also say the same of the clerks. As regards Mr. Barron, they all knew the value of his services, and were well acquainted with the admirable manner in which he carried out his duties at Chiswick. It was also announced that complete arrangements had been made with the Directors of the Agricultural Hall, Islington, in reference to the Exhibition of horticultural appliances at the end of August. He thought that one of the greatest disadvantages in exhibitions of this kind—the testing of exhibits—had been overcome, and the Show was likely to be a success.

During the meeting the scrutineers' result of the ballot was announced, and it was to the effect that Sir John Llewelyn, Bart., the Hon. Walter Rothschild, and J. T. Bennett-Poe were elected members of the Council. The following officers, in addition to Rev. W. Wilks, Secretary, were also re-elected:—Sir Trevor Lawrence, Bart., President; Philip Crowley, Esq., Treasurer; and Messrs. H. Turner, H. Williams, and A. H. Pearson, Auditors.

Votes of thanks to the Chairman and Auditors concluded the proceedings.

#### REPORT OF THE COUNCIL FOR THE YEAR 1892-93.

THE year 1892 has again been one of steady work and progress for our Society.

Two Conferences have been held at Chiswick—viz., on Begonias and on Apricots and Plums. The attendance of Fellows and others at these Conferences, as also at the fortnightly lectures in the Drill Hall, has continued to be more encouraging than in previous years. Fellows would greatly assist the Council by making these meetings and lectures better known among the general public.

Twenty-two fruit and floral meetings have been held in the Drill Hall, besides those held at Chiswick, and lectures have been delivered at nineteen of them. The number of awards has been as follows:—On the recommendation of the Floral Committee, 62 first-class certificates against 33 in 1891, 156 awards of merit against 183, and 2 botanical certificates. On the recommendation of the Orchid Committee, 48 first-class certificates against 34 last year, 72 awards of merit against 38, 29 botanical certificates against 10. On the recommendation of the Fruit and Vegetable Committee, 27 first-class certificates against 6, and 18 awards of merit against 7 last year.

The Society's Great Show held (by the renewed kindness of the Treasurer and Benchers) in the Inner Temple Gardens, was as great a success as ever, alike in the number of visitors, the quantity and quality of the exhibits, and the propitiousness of the elements. The best thanks of the Society are due to all who so kindly brought their plants for exhibition or otherwise contributed to the success of this Show.

The Society's general work of scientific experiment and investigation, and of the practical trial of various plants, has been going on steadily at Chiswick, under the superintendence of Mr. Barron. Trial has been made of 45 varieties of Tomatoes, 12 of Turnips, 79 of Runner Beans, 66 of Beet, 79 of Vegetable Marrows, edible Gourds, and Pumpkins, and 80 of Savoy and Cabbages. Eighty-nine new varieties of Potatoes, and 104 new Peas have been tested. In the floral department 200 varieties of Carnations and Picotees, and 50 of Pinks, 200 Dahlias, 80 Violas, 44 of Sweet Peas, 26 bedding Begonias, 324 Phloxes, 500 Pæonies, and 330 Asters (Michaelmas Daisies) have been tried. The Phloxes, Pæonies, and Asters have each had the special attention of a Committee of experts both in regard to their proper nomenclature and their value as hardy border flowers. The reports of these Committees will, it is hoped, be ready for publication during the present year.

Experiments have also been made with a fruit evaporator, kindly presented to the Gardens by Messrs. Mayfarth, and most satisfactory and encouraging results have been obtained in the drying of both Apples and Plums.

The Journal of the Society has been continued so as to enable Fellows at a distance to enter more fully into and reap the benefits of the study and work of those more actively engaged at headquarters. The first part of vol. xv. was published early in the year, and the second and third parts (now ready for issue) were delayed owing to the pressure of work caused by the preparation of the Conifer volume.

The Conifer Conference report, forming vol. xiv. of the Journal, is a work on the publication of which the Society may well be congratulated, and the thanks of all the Fellows are due to those who have so kindly contributed to it, and also especially to those on whom the heavy work of editing the volume has fallen.

The Council wish to repeat verbatim one paragraph of their last year's report, which runs as follows:—

All these conferences and meetings, and especially the work and maintenance of the Chiswick Gardens and the publication of the Journal, have involved the Society in a very large outlay, and the Council take this opportunity of endeavouring to impress upon Fellows the absolute necessity there is for them all individually (as many as have the Society's welfare at heart) to endeavour to secure new Fellows to the Society if its work is not only to be continued at its present standard, but still more so if the ever-opening and extended opportunities of usefulness are to be embraced and accepted. The adoption of £1 ls. as one rate of subscription was, no doubt, a popular movement, but the Council desire to remind the Fellows that such a low rate of Fellowship can only be self-supporting if it draws into the Society a very large number (far

larger than at present exists) of additional Fellows. The Council, therefore, venture to express the hope that every Fellow of the Society will make an endeavour to obtain at least one new Fellow during the present year. A statement of the privileges of Fellows and of the aims and objects of the Society will be found in the Society's arrangements for 1893, page 5.

The following table will show the Society's progress in regard to numerical strength during the past year:—

DEATHS IN 1892.				FELLOWS ELECTED 1892.			
		£	s. d.			£	s. d.
Life Fellows	27	0	0 0	4 Guineas	8	33	12 0
4 guineas	2	8	8 0	2 "	75	157	10 0
2 "	18	37	16 0	1 "	291	305	11 0
1 "	25	26	5 0	Associates	4	2	2 0
	72	£72	9 0	Affiliated Societies	13	15	15 0
					391	£514	10 0
				Deduct loss		236	5 0
				Net Increase in Income		£278	5 0
RESIGNATIONS.							
		£	s. d.				
4 guineas	2	8	8 0	New Fellows, &c.		391	
2 "	37	77	14 0	Deduct Resignations and		185	
1 "	74	77	14 0	Deaths			
	113	£163	16 0				
TOTAL LOSS	185	£236	5 0	Numerical Increase		206	

The most noticeable feature in last year's work, besides the Begonia Conference and the issue of the Conifer volume, has been the promulgation of a scheme for the examination of students and others in the principles and practice of horticulture, and a scheme is on foot for providing scholarships, whereby the most promising students may be enabled to pursue their studies in connection with the Society's Gardens at Chiswick or elsewhere. The first examination was held in the early part of the year at the request of the Surrey County Council, when seventy-two candidates presented themselves, with the result that twelve passed to the satisfaction of the examiners in the higher grade, and seventeen in the lower grade. A second examination will be held in May of this year, when it is proposed to extend it to candidates in all parts of England.

In round numbers £1700 has been expended at Chiswick this year on the general work, and repairs and keeping up of the Gardens. A further sum of about £386 has been laid out in special repairs—viz., in the thorough repainting and repair of the great vinery both inside and out, and in furnishing a new boiler, &c. The receipts from the Gardens by sale of surplus produce amount to £573, making the net cost of the Gardens £1514.

In conjunction with the Lindley Library Trustees, the Society's library has received considerable attention. All serial publications have been kept up to date, a large number of valuable volumes have been bound, and the following new books, amongst others, added to the library—viz.:—

- "Schweizerisches Pflanzen-Idiotikon."
- "Synopsis Muscorum europæorum."
- "Synopsis Filicum."
- "The Uses of Plants."
- "The Narcissus, its History and Culture."
- "The Silva of North America."
- "The British Moss Flora."
- "Stein's Orchideenbuch."
- "Indische Heil und Nutzpflanzen."
- "La Taille des Arbres fruitiers," and many others.

The best thanks of the Society are due to all those who, either at home or abroad, have so kindly and liberally presented books to the Library or plants or seeds to the Gardens. A list of the donors has been prepared, and will be found in the Society's Journal, vol. xv., parts 2 and 3, 1893. The Council also wish to express, in their own name and in that of all Fellows of the Society, their great indebtedness to all who have so kindly contributed, either by the exhibition of plants, fruits, flowers, or vegetables, or by the reading of papers, to the success of the conferences and fortnightly meetings.

The papers read at these meetings, most of which have been already published in the Journal, are as follows:—

- Jan. 12 "Winter Vegetables," Mr. W. Iggulden.
- Mar. 8 "Plants for House Decoration," Mr. John Wills.
- " 22 "The Cultivation of Melons," Mr. C. Ross.
- April 12 "Daffodils," The Rev. G. P. Haydon, M.A.
- " 19 "The English Florists' Tulip," the Rev. F. D. Horner.
- May 3 "Bulbous Irises," Professor Michael Foster, F.R.S.
- " 17 "Hardy Climbers and Creepers," Mr. W. C. Leach.
- June 7 "Summer Pruning and Training of Fruit Trees," Mr. A. Young.
- " 21 "The Management of Trees in Parks and Gardens," Mr. W. T. Thiselton Dyer, C.M.G., &c.
- July 12 "Orchids for a Cool House," the Rev. E. Handley, M.A.
- " 26 "Insect-eating Plants," Mr. A. J. Manda.
- Aug. 9 "Fuchsias," Mr. Geo. Fry.
- Sept. 6 "Root-Pruning," Mr. Geo. Bunyard.
- " 20 "Variation of some Hardy Plants under Cultivation," the Rev. C. Wolley Dod, M.A.
- Oct. 4 "Michaelmas Daisies," Mr. D. Dewar.
- " 18 "Cycads," Mr. W. Carruthers, F.R.S.
- Nov. 1 "Fruit Trees in Pots," Rev. W. Wilks, M.A.
- " 15 "Zonal Pelargoniums for Winter Flowering," Mr. C. Pearson.



The hearty thanks of the Society are due to the Chiswick Board and to all the members of the standing Committees—viz., the Scientific, the Fruit and Vegetable, the Floral, the Orchid, and the Narcissus Committees, for the kind and patient attention which they have severally given to their departments; also to the exhibitors who have contributed to so great an extent to produce the valuable results of the various meetings.

The Council have the sad duty of recording the death of seventy-two Fellows during the year, and amongst them they regret to find the names of the Duke of Manchester, the Duke of Marlborough, Earl Denbigh, the Earl of Lichfield, the Marchioness of Waterford, Sir Henry Cotton, Captain Nelson, Mr. C. Sharman, &c.

A scheme for the affiliation of local societies was put forward in 1890, and forty-six local societies have availed themselves of it. The Council express the hope that Fellows will promote the affiliation of societies in their own immediate neighbourhood.

In the spring of the year the Rev. W. Wilks—who has acted as Honorary Secretary of the Society since 1887, and the great value of whose services is well known to the Fellows—requested that he might be relieved of his office. Understanding that he took this step solely on account of his having received an offer of literary work which he did not feel justified in refusing, the Council unanimously decided to

take advantage of the power given in the Charter of making the Secretaryship a salaried office, as it is in the Royal Society, the Linnean, and most other similar bodies. They are glad to be able to say that, under the altered conditions, Mr. Wilks willingly consented to refuse, for the present at least, the lucrative offer that had been made him, and to continue to devote his services to the Society's welfare. A resolution to this effect will be submitted to the annual meeting. This alteration of the Secretary's position created under the Charter a vacancy in the Council.

Besides the great Spring Show in the Temple Gardens, which will be held this year on May 25th and 26th, the Council have decided to hold a Show at Chiswick on July 11th, at which prizes will be offered for local exhibits.

The Council have also entered into an agreement with the Directors of the Royal Agricultural Hall, Islington, to hold a great Autumn Show at that Hall, from August 29th to September 1st, inclusive. A special schedule will be issued in March, and upwards of £400 in prizes, medals, &c., will be offered for fruit, flowers, and vegetables, and for horticultural appliances, machinery fittings and sundries. All articles shown in the latter group will have to be fitted up and in working order from August 24th to September 1st, so that the judges may put them to practical tests.

ANNUAL REVENUE AND EXPENDITURE ACCOUNT FOR THE YEAR ENDING 31st DECEMBER, 1892.

[illegible]

BALANCE SHEET, 31st DECEMBER, 1892.

BALANCE SHEET, 31st DECEMBER, 1892.					£	s.	d.	£	s.	d.
To SUNDRY CREDITORS .. .. .					339	15	5	By SUNDRY DEBTORS—		
„ Subscriptions, 1893, paid in advance .. .. .					80	16	11	Annual subscriptions outstanding, estimated at .. .. .		
„ GENERAL REVENUE ACCOUNT—								Garden produce .. .. .		
Balance, 1st January, 1892 .. .. .					1985	11	6	Advertisements in schedules .. .. .		
Donations transferred to this account.. .. .					345	0	0			
Less :					2330	11	6	„ INVESTMENTS—		
Subscriptions for 1891, not paid, and bad debts .. .. .					68	13	6	2½ per cent. Consols £2122 8s. 9d. cost .. .. .		
								(£2022 8s. 9d. of this sum is held by the Society,		
								subject to the provisions of the will of the late		
								J. Davis, Esq.)		
								2½ per cent. Consols £500, cost .. .. .		
Less :										
Subscriptions for 1891, not paid, and bad debts .. .. .					68	13	6	„ CASH AT LONDON AND COUNTY BANK—		
								On current account .. .. .		
					2261	18	0	„ CASH IN HAND .. .. .		
Less :										
„ Balance for the year 1892, as per revenue account.. .. .					71	3	11			
					2190	14	1	We have examined the above accounts, and find the same correct.		
								(Signed) HARRY TURNER, } Auditors.		
								HENRY WILLIAMS, }		
								HARPER BROS., Chartered Accountants.		
					£2611	6	5	January 10th 1893.		

## WHAT CONSTITUTES AN AMATEUR?

MR. MOLYNEUX'S definition (page 117) would apply to almost every case, still this has its difficulties. In athletics an amateur may not take a money prize; it would not do in horticultural competitions. And "dealing in horticultural produce" has its loophole. Is parting with your surplus stock of Grapes or wall fruit "dealing in horticultural produce?" Is selling our surplus cut flowers, Orchids, for instance? If it be, I am afraid few of us can escape. Is giving buds or seeds to gardeners, and receiving plants in exchange, "dealing in horticultural produce?"

Further, almost as difficult of definition as amateur is the word gardener. What or who is a gardener or "paid gardener?" Some years ago, a country committee, anxious to get some of the tradespeople in the town to exhibit Chrysanthemums, made four or five classes for "those not employing a regular gardener." "Yes," I remarked, "a very good thing, and I can exhibit in that class." At this there was a loud outcry. "Why, you have two men at work." "Yes; one is my groom, who has nothing to do with my Chrysanthemums, and the other man

only does with them exactly what I tell him; in fact, no better than a labourer."

I did not show in those classes, and never intended doing so; but at a large provincial show I did enter in classes for "those not employing a regular gardener." I took a prize in each of the classes, but I cannot say that I think the classes were intended for persons like myself, and I have not repeated the experiment. Seeing that I potted almost every plant, that I stopped them, set the buds, &c., I consider I was my own gardener, and entitled to enter, but I still do not feel that it was a class meant for me. Yet I can also see that against persons employing professed gardeners, one for hothouses, another for Roses, and a third for Chrysanthemums, I have but faint prospects of obtaining any position but at the tail end of the class.

A "paid gardener" should mean a man who from his knowledge can command at least 20s. a week. Again, a person who has a trained gardener in once or twice a week, and follows out his directions, is far better placed than one employing a man regularly, who is yet no professed gardener. This also needs being settled. My own view is just this, that a man who can command his pound a week, or, if going



out by the day, receives 3s. 6d., that man should be considered a professional gardener, and, if employed only once a week, should yet disqualify a person from exhibiting in such restricted classes.—Y. B. A. Z.

### CALLISTACHYS LONGIFOLIA.

A CORRESPONDENT writes:—"I cannot understand why so many of the beautiful hard-wooded plants have been allowed to slip out of cultivation," and adds, "Callistachys longifolia used to be a special favourite of mine, but I have not seen it for years. It should be more generally grown."

We have under the circumstances much pleasure in giving our correspondent another glance at his "special favourite," and agree with him that it ought to be "more generally grown." The accompanying illustration (fig. 26) portrays the flowers and foliage of this somewhat neglected plant, which, as a rule, blooms during the summer. The leaves are lanceolate, mucronate, some 6 inches long, smooth, dark



FIG. 26.—CALLISTACHYS LONGIFOLIA.

green above. The standards of the flowers are yellow, and the wings purple. When properly treated the plants are extremely beautiful, and ought to be more frequently seen in gardens.

### TRADE CATALOGUES RECEIVED.

- E. Webb & Sons, Wordsley, Stourbridge.—*Farm Seeds*.  
 Sutton & Sons, Reading.—*Farmers' Year Book and Graziers' Manual*.  
 R. C. Notcutt, Broughton Road Nursery.—*Chrysanthemums, Zonal Pelargoniums, &c.*  
 M. Campbell, Blantyre, N.B.—*Florists' Flowers*.  
 R. Owen, Castle Hill, Maidenhead.—*New and Select Chrysanthemums*.  
 Barr & Son, 12, King Street, Covent Garden, London.—*Catalogues of Seeds, Herbaceous Plants, Bulbs, &c.*  
 H. Dobbie, Frettenham, Norwich.—*Herbaceous and Alpine Plants*.



### HARDY FRUIT GARDEN.

**Apricots, Peaches, and Nectarines.**—The season is now sufficiently advanced to undertake the pruning and refastening of the trees to the walls. Apricots should be operated upon first, as they are the first of stone fruits to expand their blossoms. They are hardier, too, than Peaches and Nectarines, but not sufficiently so to withstand, without protection, all the rigours of adverse weather after the flowers have expanded. If efficient protection can then be afforded during that critical time, good crops of fruit will be secured. The same applies to Peaches and Nectarines. On well-managed wall trees the principal pruning is done immediately after the fruit is gathered. That practice is, however, not general owing to various reasons, and there is often much to be done to trees at this season.

**Main Branches.**—It is assumed that the trees will, in order to prevent the buds swelling prematurely, have been loosened from immediate contact with the walls during the winter. It is important that the principal branches retained be in a healthy and vigorous condition, or gaps may occur in the framework of the trees which will spoil their appearance. Apricots are subject to the sudden dying away of branches, but not necessarily so when good culture and proper systems of pruning are accorded them at every period of growth. Any principal or subsidiary branches that exhibit any loss of vigour remove entirely before commencing to re-arrange. Branches of medium strength are the most satisfactory. The main branches should be spaced out to equally cover the wall, the subsidiary ones being allotted positions accordingly, so as to leave sufficient room for the disposal of the bearing shoots.

**Mode of Bearing.**—There are three distinct methods by which Apricot trees bear fruit. The most general method of culture is the training and laying in yearly of a number of the previous year's shoots. The finest fruit is borne on these. After the fruit is gathered the bearing parts are cut out, their places being taken by succession shoots trained for that purpose. In addition to these, however, a number of shoots are produced either badly placed for laying in, or for which no room can be found. Many growths are rubbed off by disbudding or cut off annually in the early summer, but some are retained. Those not wanted for laying in as succession shoots are shortened when they have developed three or four good leaves, resulting growths that push afterwards being pinched to one leaf. The growths thus managed in summer and shortened to a few buds in autumn or winter develop in time into spurs. These, not too freely encouraged so as to crowd the trees, nor allowed to lengthen and become too large, will, when a few years old, produce fruit, furnishing the wall where it might otherwise be bare. Besides the last-mentioned there are the natural spurs, which Apricots produce freely. They are preferable to those produced by pinching, as they are closer to the wall, need less management, and are safer from injury in bad weather. Peaches and Nectarines will also fruit on spurs, but as a rule young wood annually laid in is the best.

**Management of Young Wood.**—With free exposure to light and air in the autumn, and a position away from direct contact with wall surfaces in winter, young wood becomes thoroughly well ripened. It then produces strong properly constructed blossom buds along the entire length of each shoot, interspersed with wood buds, the latter sometimes solitary, at others in company with one, two, or a cluster of fruit buds. It is generally necessary to shorten the bearing shoots or young wood when laying it in, doing so more or less according to their vigour, the position of wood buds, or the ripened condition of the shoots. It is useless to shorten a bearing shoot to a fruit bud, as extension cannot take place from it, but must proceed from a wood bud. It is necessary to have a growing shoot above the fruiting portion of a young branch, in order to attract sap to the fruit. Shoots immature at the tips shorten back to ripe wood, selecting a triple bud, and cut above that. The shoots retained should be from a foot to 15 inches in length, but if greater lengths of ripened wood are available, and can be accommodated without crowding, secure them.

**Cleansing Walls and Trees.**—Before the trees are again permanently secured in position, take precautions that the branches are perfectly free from the eggs of insects, the crevices and crannies of the rougher portions of the bark often affording secure hiding places for them. It is the same with the walls. Old nail holes and spaces between the courses of bricks occasioned by the falling away of mortar, are frequently full of active and inactive insect life. Such spaces ought to be filled either with mortar or cement, but where nails have to be driven in the latter should not be used. Afterwards wash the whole wall surface with a strong solution of Gishurst compound, 8 ozs. to the gallon, or some other of the advertised insecticides. Paint the trees with a solution of less strength except for the rougher parts of the tree, such as the main stems and branches. Brush the mixture well into every angle, crevice, and corner of the wood, taking care not to dislocate or injure the buds. To facilitate the operation of applying the solution, slightly colour it with soot and sulphur.

**Nailing and Training.**—In refixing the trees secure the main branches firmly and dispose the others equally, leaving space for the bearing shoots to be trained in 4 or 5 inches distance from



each other. From the base of each young shoot, it must be borne in mind, a succession growth has to be selected and trained in during the summer. If, therefore, the young wood is trained in too closely there will not be room for successional growths. Use clean, strong shreds and good nails, but as few as possible consistent with security. See that the shreds do not close round the wood, especially the young wood, too tightly, nor allow nails to press against the bark to injure it and cause gumming.

**Top-dressing the Borders.**—Should the surface soil of the borders be exhausted, and few fibrous roots to be found, clear away the old soil until some roots are discovered, and add fresh compost, sweet loam containing some pulverised lime scraps and charred refuse. Too rich compost is not desirable, but if the trees are weakly a good soaking of liquid manure would be beneficial. Ascertain first, however, that the border is not dry below; because, if so, clear water should first be given. This would moisten the soil and prepare it for enrichment with something stronger and more stimulating.

#### FRUIT FORCING.

**Figs.**—*Earliest Trees in Pots.*—With a steady bottom heat of 70° to 75° about the pots the roots are now very active, and the points of the rootlets showing at the surface is a clear indication of their eagerness for further supplies of nourishment. To supply that turves 3 inches thick and 1 foot long may be placed around the rims of the pots, extending a couple of inches inside the rim, and the other part of the turf projecting over may be turned down by the side of the pot, closely placing fermenting material against it. This will leave a receptacle around the stem for top-dressings of partially decayed lumpy manure, and the roots will permeate the turf and pass along it over the pot rims into the fermenting material. Where there is not a fermenting bed hoops made of lead or zinc 4 inches deep should be placed inside the rims of the pots and occasional surface dressings given. Liquid manure in a tepid state may also be given in sufficient quantities to pass through to the drainage as required. Trees carrying full crops will require frequent supplies, and a varied dietary is more beneficial than always adhering to one kind of nourishment. Nitrate of calcium is the essential food of the Fig, but it must only be used in a weak state, say 1 oz. to 8 gallons of water regularly, or 1 oz. to 4 gallons of water when given occasionally. Liquid manure from stables and manure yard tanks should be weak, pouring it on the turves as well as in the pots. Regularity in watering is a great point in the cultivation of Figs in pots.

Keep the atmosphere in a genial condition by syringing twice a day when the weather is fine, and by damping the surface of the bed, walls, and paths when dull. Maintain a night temperature of 60°, 5° less on cold nights, 60° to 65° by day artificially when cold, and 10° to 15° rise with gleams of sun. Ventilate a little at 70°, keep at 75° to 80° through the day with sun heat, and close early so as to run up to 85° or 90°. Stop and tie the growths as they advance, keeping them rather thin. Figs, to have flavour and colour, must be fully exposed to light and have a free circulation of air.

**Early-forced Fig Trees in Borders.**—Those started early in January must be attended to in disbudding and stopping, leaving no more shoots than are required for extension, and a due supply of successional bearing shoots. Extension shoots need no stopping, nor do successional growths when the wood is sturdy, short-jointed, and fruitful. All the growths must be thinly and evenly disposed, stopping spur-shoots at the fifth or sixth leaf; but it is not advisable to encourage too many of these, as the best fruit is borne on the extension shoots, yet spurs give good results in the second crop. Mulch the borders with a rich compost as the roots rise to the surface, and supply tepid liquid manure freely. An occasional dressing of some approved advertised fertiliser, applied according to the instructions, accelerates root activity, as well as supplies nourishment, provided the surface of the border is kept properly moist. The temperature and atmospheric moisture should be similar to that advised for pot trees.

**Late Houses.**—If these are expected to supply two crops of fruit the trees must be pruned and cleansed, and the houses started not later than the beginning of next month. Unheated houses are only fitted for producing one crop of fruit in August and September. The trees should now have the protection removed, be pruned and dressed, keeping the house as cool as possible so that they may start naturally. In unheated houses the growths should be kept thin, so that the young shoots may be firm, short-jointed, and with judicious management well matured, otherwise satisfactory crops are uncertain.

**Pines.**—*Starting Shoots.*—A batch of these will have to be started about the beginning of March to provide plants to give a succession of fruit from next December onwards. Attend, therefore, to the preparation of a fermenting bed in some close structure to maintain a bottom heat of 85° to 90° near the surface, and with means of securing a temperature of 55° to 65° with regularity. Attention must also be given to the preparation of the soil for potting, having it under cover to become warm and properly fit for use.

**Plants Started for Fruit in December.**—Those selected early in that month and advanced by an increased temperature are now showing fruit. As it is desirable to forward the ripening of the fruit of these plants as much as possible the temperature should be maintained at 65° to 70° at night, 5° to 10° more under favourable external conditions in the daytime, ventilating at 80°, allowing an advance to 85°, and closing the house at that temperature so as to husband the sun heat. The plants, now the fruit is advancing, will require more water at the roots, examining them once a week and affording a supply to those in need, as with more light and heat the demand increases.

**Recently Started Plants**—This batch being intended to succeed those just named, the plants need not be hurried, but allowed to come on gradually in a temperature of 65° at night and 70° by day artificially, ventilating at 75° and closing at 80°. Due supplies of water should be given at the roots, but only when required, and always of a stimulating nature, say 1 lb. of guano to 20 gallons of water.

**Peaches and Nectarines.**—*Earliest House.*—A steady progressive course is the safest, maintaining a night temperature of 50° to 55° in severe weather, and not more than 5° higher when the weather is mild, 60° to 65° by day artificially, and 5° to 10° more with gleams of sun. Ventilate freely under favourable conditions, admitting a little air at 60°, so as to insure a change of atmosphere. Regulate the growth by disbudding; when strong the whole of the foreright shoots may be taken off at once, and some of the side shoots on the extensions be pinched back to form spurs. On shoots, however, that will be removed after the fruit is gathered the best break from the base and another above the fruit only must be retained. Give the basal growths room for extension and full exposure to light, and pinch the shoot reserved on a level with or above the fruit to two or three leaves.

**Second House.**—Trees started at the new year and having previously been forced from that date have set the fruit, but those forced early for the first time are setting, and therefore daily resort to careful fertilisation. When the fruits are all set, syringe with tepid water, which will soon clear them of the remains of the flowers. Avoid, however, excessive syringing, as it induces a soft growth. The night temperature should be kept at 50°; 55° by day, and 5° to 10° advance from sun heat, ventilating freely whenever the weather is favourable. Defer disbudding until the fruit is fairly swelling, and proceed carefully and gradually, but follow it up when commenced, not deferring it so that large reductions of growth must be made at once. Checks of any kind are usually disastrous to the fruit. Supply water to inside borders so as to keep the soil in a healthfully moist state, but do not make it sodden and sour by needless supplies.

**Third House.**—The trees started at the beginning of this month have the flowers advanced, and a close inspection should be made for aphides, or as a precautionary measure fumigate, having the trees dry, and repeating it on alternate evenings. Take care not to give an overdose, as that may discolour the corollas, and the blooms so damaged seldom set satisfactorily. When the anthers show clear of the petals, cease syringing the trees, yet maintain a genial atmosphere by damping available surfaces in the morning and afternoon. Maintain a day temperature of 50° by artificial means, 40° to 45° at night suffice by that agency. Ventilate at 55°, allow an advance to 60° or 65° from sun heat, with a free circulation of air. Make sure that there is not a deficiency of moisture in the inside border by examining it occasionally, and when necessary afford a thorough supply of water.

**Late Houses.**—Keep these freely ventilated by night and day, except where the buds are advanced in swelling and when frost prevails. Houses from which the roof lights have been withdrawn need not have them replaced until the buds commence swelling and the most forward blossoms are showing colour. Where the roof lights are fixed they may be covered with mats on sunny days so as to retard the blossoming, and take care that the roots of the trees are kept properly moist. Neglect of due moisture at the roots often causes many of the buds to fall.

#### PLANT HOUSES.

**Acalyphas.**—Plants used in the conservatory and afterwards cut back and placed in heat will have plenty of shoots to provide cuttings. These may be taken off and inserted in thumb pots in sandy soil. Give a good watering and plunge the pots in the propagating frame. The cuttings root freely and quickly if kept close. Plants with good heads that have become bare at the base may be notched and moss bound round the wounds. If these plants are kept close they will soon emit roots from the stem, and will be ready for taking off and placing singly in pots. Plants raised from tops should, if well cared for, make good specimens with bold foliage at the base.

**Euphorbias.**—Those plants that have done flowering should be kept on the dry side at their roots in a temperature of 50° to ensure a short rest before again starting them into growth to yield cuttings. Poinsettias may be subjected to the same treatment.

**Gardenias.**—Young plants rooted in July or August may be placed into 5-inch pots. If possible plunge the plants where they can enjoy a slight bottom heat. When once they start into growth they will push up freely from the base and make excellent plants for flowering in one season. Plants that are swelling their flower buds push on in brisk heat. Others that have their flower buds just set must not be checked by keeping them in too low a temperature by giving them cold water, over-feeding, or the use of strong insecticides, or the flower buds will be deformed. Those plants that were cut back late and are not going to flower may have the points removed and then started into growth with the young stock.

**Asparagus plumosus.**—Cuttings may be inserted in thumb pots; one joint with a small frond attached will be ample. Plunge the pots in the propagating frame. During the summer they will make good plants for table decoration and other purposes. When larger plants are needed put some of those raised last year from cuttings into 7-inch pots. *A. plumosus nana* must be increased by division. Select a plant or plants that have made a number of crowns and not started to run. These are the best for propagating purposes, and every piece with an eye will make a plant. When once established this plant does much better in a cool house than in heat, and is rarely attacked by insects unless it is aphides.



**Marantas.**—These should be repotted where they need it, as they invariably do best in fresh soil. If the plants are potted at once and plunged in bottom heat they will become established before the sun gains much power. These plants cannot endure bright sunshine, but they delight in a close moist shady atmosphere. Where an increase in the stock is needed the plants should be divided. Do not overpot them. Use a compost of good fibry loam, one part leaf mould, one-seventh of decayed manure and sand; charcoal in lumps may also be added. Some of the large kinds do best in a rough compost of fibry loam from which the small particles of soil have been removed, rough peat, sand, and charcoal.

## THE BEE-KEEPER.

### APIARIAN NOTES.

"HOPE springs eternal" in the husbandman's breast, whether he be fruit grower, farmer, gardener, or bee-keeper. The past may have been fruitful in losses, but as spring comes round hope revives, and the newly turned up fresh soil adds renewed animation to the sons of toil. With the bee-keeper joys are increased by the appearance of flowers on every side, the singing of birds, and the hum of the honey bee.

Our bees searched for pollen on the first day of February, but as yet (the 9th) none has been gathered, but it cannot be delayed long now. In order to keep the bees near the apiary to prevent loss, they will be supplied with peameal, and water troughs in sunny nooks. A terra cotta pipe a foot or more in diameter, closed at one end, is a suitable place for the former supply, and a cylindrical vessel filled to within a few inches of the top with water covered with granulated cork is good for bees. Honey and peameal mixed to a thin paste, and put into a scoop, is also good for them.

### FEEDING.

Hives suspected of being short of stores before May will, whenever the weather is calm and serene, be supplied with a few pounds of food from below. The crown of the hive at this season should not be opened, as it induces cold, and the bees to leave the cluster where they are most required to keep up the heat for the gradual development of the brood. When checked they creep out of their cells in a mutilated form. Beyond these operations all my hives will remain as they were arranged in the autumn until the deposition of young queens take place after swarming, or the application of supers some time in June.

In places where the only honey flow comes early in the season, feeding a little more liberally will insure the greater number of eggs being brought forward; but in the majority of cases no advantage is gained. Utilising the brood, or portion of it, from another hive on the two-queen principle gives early and strong stocks suitable for gathering the maximum yield of honey in the shortest period.

### OLD BEES FEEDING YOUNG ONES.

Apropos of field bees feeding youthful bees inside the hive, it is well to remember that a full colony requires a large quantity of water for the internal economy of the hive in brood-rearing, sealing, wax secretion, and the building or alteration of the comb. Water for some of these purposes is given by the adult bees to the younger ones, probably because it has risen to a higher temperature in the stomach of the adult bee, and is then more suitable for the purpose than if it was several degrees lower; besides, who knows but the water, in contact with the stomach of the bee, acquires a chemical change suitable for certain purposes within the hive?

### BEES AND ELECTRICITY.

It is now many years since I first noticed several phenomena regarding bees and electricity. I wish to go a little further, and ask those who are able to do so to try a few experiments with bees as to their electrifying power during the present year. I made a number of experiments with a magnetic needle; in every case the needle was affected out of its true course when changed from the one side of the bees to the other. I will repeat the experiment when I am certain there is nothing about but bees to affect the movement.—A LANARKSHIRE BEE-KEEPER.

### TOMTITS AND BEES.

I saw in the Journal of January 5th (page 18) an interesting article on "Tits and their Habits," so I thought that an extract from my manuscript on bees would interest your readers. On November 30th, 1872, I saw on one of my bee-benches a number of wings, legs, stings, and outside scales of the bodies of bees. I soon said, "The Tomtit (*Parus cœruleus*) has been busy here." I had not noticed or seen it before that year, but about four o'clock I saw

three tomtits eating my bees. One of them I watched, and saw him fly down on to the alighting board of one of the hives. He began tapping it with his bill. Shortly a bee came out to see who was there, and was immediately snapped up by the tomtit, which flew with it into an Apple tree near the hive. He then beat the bee against the bough of the tree, on which he stood until it was killed. Then the tomtit with its right foot and beak pulled the bee's wings, legs, sting, and head off, letting the rejected parts fall to the ground, and it then ate the dainty parts of the bee. The tomtit was soon down on the alighting board of the hive again; tap, tap, tap, and another bee came out to see who was there. Then the same process was repeated. I saw him take five bees in this way in seven minutes, when I could stand it no longer, so I frightened the tomtit away, as I was afraid he might have the nightmare with eating such an enormous supper.

The tomtits were eating my bees again before ten o'clock the next morning. So I brought out my gun and shot three of them, and on opening their craws I found them nearly filled with bees—one head, antennæ, and tongue complete. This bird must have been very hungry, as they generally reject the head. I found no wings, legs, or stings in the craws. It grieved me very much to have to kill these useful, beautiful, and interesting birds, but it required patience to see my pets—the bees—so mercilessly destroyed.

Your correspondent is quite correct. The tomtit does no harm to fruit buds or to the bees in summer, there being at that time such an abundance of insect food which the tomtit prefers. It is only when its natural food fails that it attacks the bee hives—WM. CARR, *Newton Heath Apiary, Manchester.*



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Dry Fruit Borders** (*J. Dobbs*).—You have undoubtedly done right in watering the borders. No greater mistake can be made than permitting Vine and Peach borders to become distinctly dry in the winter. You would have done still better in giving liquid manure copiously in the autumn. We conceive it impossible for either the Vines and Peach trees to long continue, even in a small degree, satisfactory in the too shallow borders under the alternative system of management indicated in your letter.

**Moss on Lawn** (*Hants*).—After all the efforts you have made to eradicate the moss, and the more you do the more it grows, we conclude the lawn requires draining. If stagnant water lodges in the soil moss is sure to be troublesome. A free dressing of lime, sifted soil, and wood ashes in equal parts might do good, and a subsequent application of bonemeal at the rate of 2 or 3 ozs. to the square yard. Much more good might also be done if drains were cut and pipes laid carefully 2 feet deep and 5 yards apart, with proper fall and outlets into a lower drain for the escape of the water.

**Renewing the Soil for Tomatoes** (*N. L.*).—It is much the best plan to renew the soil every year, having it about 1 foot deep over good drainage, taking the whole out and supplying fresh in its place. This need not be an expensive affair, for the top spit of good garden soil that will grow Potatoes well will answer for Tomatoes. We advise that plan—make an exchange of the top spit in the house for the top spit of good soil outdoors, with a judicious application of artificial manure. Dwarf Kidney Beans would only be profitable if distinctly early. Ne Plus Ultra is an excellent variety, but the danger is that they will introduce red spider, and that is a fearful pest on Tomatoes and Vines.

**Distance of Vines for Profit** (*N. L.*).—This is a vexed question, some preferring close and others wide planting. When the free-bearing varieties are grown, such as Black Hamburgh, the Vines are usually planted 3 feet apart as you propose, and double the crop is had from the first that would be obtained were only half the Vines planted. They are cropped the year after planting, and each Vine is taxed to its fullest capacity consistent with perfect finish in the fruit. This is a difficult point to determine, and requires a perfect knowledge of



the bearing power of the Vines. This heavy cropping does not last long. Several growers find it profitable to occupy the space quickly, crop the Vines heavily, and when they are exhausted root them out and plant young Vines, or cut away the old rods and replace them with young from the base. The plan seems to be what you require—the fullest supply of Grapes of marketing quality from the least space in the shortest time; therefore another Vine may be planted midway of the distance between the existing ones, so that they will be 3 feet apart; but you must not expect that part of the Vines on the back wall to produce satisfactory Grapes after the roof two-thirds down is occupied with rods 3 feet asunder.

**Grubs in Marguerite Leaves (F. D.).**—The leaf-mining insect is the larva of a small fly (Tephrites) similar to, if not identical with, the Celery fly which punctures the leaves and deposits eggs in them, these hatching into maggots that eat out this substance, often ruining the plants. The Celery fly can be prevented doing material injury by syringing the plants with a solution of petroleum and soft soap, 2 ozs. of the soap and a lump of soda being dissolved in a gallon of boiling water, stirring in very briskly while hot half a wineglassful, or a little more, of ordinary petroleum, or paraffin as it is incorrectly called, such as is burned in lamps. It should be applied to the plants in the evening. We have known it to destroy the maggots in the leaves. You can try the experiment of dipping a plant in the solution and noting the effects. You might also try lemon oil, using it according to the instructions supplied by the vendors.

**Mushrooms in Summer (Amateur).**—We gather from your letter that you desire to grow Mushrooms outdoors in summer. For that purpose a cool place is essential. A grower of our acquaintance digs a trench of the requisite width on the north side of a wall, fills it with suitable manure pressed down in the usual manner, sloping the surface up to the wall, casing with soil, covering and keep all moist, and he has excellent crops. In the absence of a position of that kind choose the coolest you have, and under and behind evergreens would be likely to answer very well. We have had good crops in a cool heavily shaded orchard in the summer. The less grass the horses have the better for the purpose in view, though we do not think you ought to fail under the circumstances you describe. You may mix one-third of Beech or Oak leaves with the manure, taking care the whole mass is uniformly moist, not over-fermented when used, and then made very firm. Peat moss, after being used in stables, may be mixed with the other materials, but excellent crops of Mushrooms have been grown from it without any admixture beyond a little loam. It cannot be so well formed into ridges as manure consisting largely of decaying straw. You had better perhaps make the beds flat or nearly so, and cover them with shutters or anything that will throw off heavy rains. Narrow ridges are apt to get too dry in summer, and if you make a bed on the level of the ground, supporting with boards, care will be necessary not to let it get too dry, especially round the sides.

**Wet Tennis Lawn (L. M.).**—The half of the lawn which is so wet and unsatisfactory is obviously the result of bad workmanship. In levelling, some of the clay should have been taken out and a layer of porous soil added equal in thickness to that under the other half of the turf that is good. Drains in such a case are of small service, as the surface water cannot pass through the clay above them. Where drains are operative it is mainly by subsoil water rising upwards, then passing away through them, the level of the pipes being what is termed the water table, which but for them would be higher and the land might be swamped. Water does not pass downwards and directly into drains, but to the water table, hence pipes a foot below the surface may be "dry," while others 2 or 3 feet below them may "run" freely. The turf should be taken off, some of the clay removed, a thick layer of soil and ashes spread on, firmed, and the turf relaid. Until that is done the bad half of the lawn cannot be made equal to the other.

**Artificial Manure for Tomatoes (X. Y. Z.).**—There is little doubt that the heavy dressing of farmyard or stable manure accelerates, if not induces, the development of the worst forms of Tomato diseases. 1, That in the leaves, fruits, and stems the Potato fungus (Phytophthora infestans); 2, Root disease caused by eel-worms (Tylenchus devastatrix). Artificial manures act in the opposite direction by strengthening the epidermal and structural tissues of the plants, and are especially valuable where the soil is rich in humus, or where the ground has been heavily manured or contains much vegetable matter, as turf. The following usually gives good results with both Potatoes and Tomatoes: Bone superphosphate 2 lbs., nitrate of soda 1 lb., kainit 1 lb., sulphate of iron, 2½ oz. mixed and applied at the rate of 2 ozs. per square yard. At that rate it is an excellent auxiliary to Potato land which has been manured with farmyard manure, applying it at the time of planting the tubers, and it may be used for Tomatoes when planting. It will not, however, do to follow on with the mixture as a top-dressing through the season on account of the chlorides which the kainit contains, and about three applications will be sufficient, say at planting (now or soon), again in six weeks, and a third dressing at a similar interval, or three only during the season. Midway of these periods you may use the following: Bone superphosphate 3 lbs., nitrate of potash 2 lbs., sulphate of lime 1 lb.; mix and apply at the rate of 2 ozs. per square yard, or, if the plants are weak and heavily cropped, double the quantity of this mixture may be used, but not of that which contains kainit. The last named mixture (not kainit) may be used exclusively through the season at intervals of about three weeks, taking care to have the saltpetre (nitrate of potash) finely powdered, otherwise it may injure the roots it comes into contact with. Similar remarks apply to nitrate of soda.

## GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL PROVIDENT AND BENEFIT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, London, W.

## COVENT GARDEN MARKET.—FEBRUARY 15TH.

No alteration. Market steady, with prices firm.

### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.		
Apples, half sieve .. ..	1	0	to	3	6	Lemons, ease .. ..	10	0	to 15	0	
„ Nova Scotia, per barrel .. ..	12	0		17	0	Oranges, per 100 .. ..	4	0		9	0
Cobbs, Kent, per 100 lbs.	0	0		125	0	Peaches, per dozen .. ..	0	0		0	0
Grapes, per lb. .. ..	0	6		3	0	St. Michael Pines, each ..	3	0		6	0

### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Beaus, Kidney, per lb.	0	6	to	1	0	Mustard and Cress, punnet	0	2	to 0	0	
Beet, Red, dozen .. ..	1	0		0	0	Onions, bunch .. ..	0	3		0	5
Carrots, bunch .. ..	0	4		0	0	Parsley, dozen bunches ..	2	0		3	0
Cauliflowers, dozen .. ..	2	0		3	0	Parsnips, dozeu .. ..	1	0		0	0
Celery, bundle .. ..	1	0		1	3	Potatoes, per cwt. .. ..	2	0		5	0
Coleworts, dozen bunches	2	0		4	0	Salsafy, bnndle .. ..	1	0		1	6
Cucumbers, dozen .. ..	8	0		12	0	Scorzonerä, bundle .. ..	1	6		0	0
Endive, dozen .. ..	1	3		1	6	Seakale, per basket .. ..	1	6		1	9
Herbs, bunch .. ..	0	3		0	0	Shallots, per lb. .. ..	0	3		0	0
Leeks, bunch .. ..	0	2		0	0	Spinach, bushel .. ..	3	0		3	6
Lettuce, dozen .. ..	0	9		1	0	Tomatoes, per lb. .. ..	0	2		0	6
Mushrooms, punnet .. ..	0	9		1	0	Turnips, bunch .. ..	0	3		0	4

### PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Ficus elastica, each .. ..	1	6	to 10	0	
Aspidistra, per dozen ..	18	0		36	0	Foliage plants, var., each..	2	0		10	0
Aspidistra, specimen plant	5	0		10	6	Genista, per dozen .. ..	10	0		15	0
Azalea, per dozen .. ..	24	0		42	0	Hyacinths, dozen pots ..	8	0		12	0
Chrysanthemums, per doz.	6	0		9	0	Lily of the Valley, dozen					
Cineraria, per dozen .. ..	8	0		12	0	pots .. .. .	12	0		18	0
Cupressus, large plants, each	2	0		5	0	Lycopodiums, per dozen ..	3	0		4	0
Cyclamen, dozen pots ..	9	6		18	6	Marguerite Daisy, dozen ..	6	0		12	0
Draecena terminalis, dozen	18	0		42	0	Myrtles, dozen .. ..	6	0		9	0
„ viridis, dozen ..	9	0		24	0	Palms, in var., each .. ..	1	0		15	0
Euonymus, var., dozen ..	6	0		18	0	„ (specimens) .. ..	21	0		63	0
Evergreens, in var., dozen	6	0		24	0	Primula, single, doz. pots	4	0		6	0
Ferns, in variety, dozen ..	4	0		18	0	Solanums per dozen .. ..	9	0		12	6
Ferns (small) per hundred	6	0		8	6	Tulips, dozen pots .. ..	6	0		9	0

### AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Anemones (French), dozen bunches .. .. .	2	0	to	6	0	Mimosa, French, per bunch	1	0	to 1 6
Arm Lilies, 12 blooms ..	2	0		4	0	Narciss, var., French, dozen bunches .. .. .	3	0	6 0
Azalea, dozen sprays.. ..	0	6		1	0	Orchids, per dozen blooms	3	0	12 6
Bouvardias, bunch .. ..	0	6		1	0	Pelargoniums, 12 bunches	8	0	12 0
Camellias, doz. blooms ..	1	0		3	0	Pelargoniums, scarlet, doz. bunches .. .. .	6	0	9 0
Carnations, 12 blooms ..	2	0		3	0	Poinsettia, per dozen .. ..	3	0	6 0
Chrysanthemums, dozen bunches .. .. .	4	0	12	0	Primroses, dozen bunches	2	0	3 0	
Daffodils, double, dozen bunches .. .. .	6	0	10	0	Primula (double) 12 sprays	0	9	1 0	
Daffodils, single, dozen bunches .. .. .	8	0	15	0	Roses (French), per doz. ..	2	0	6 0	
Eucharis, dozen .. .. .	4	0	6	0	„ boxes, 100.	5	0	8 0	
Gardenias, per dozen ..	12	0	24	0	„ (indoor), dozen .. ..	2	0	4 0	
Hyacinth, Roman, 12 sprays	0	6	1	0	„ R d, per doz. blooms..	6	0	12 0	
Lilac, white, French, per bunch .. .. .	4	0	6	0	„ T a, white, dozen .. ..	1	6	3 0	
Lilium longiflorum 12 blooms .. .. .	9	0	12	0	„ Yellow, dozen .. ..	4	0	6 0	
Lily of the Valley, dozen sprays .. .. .	0	6	1	6	Snowdrops, dozen bunches	1	0	2 6	
Maidenhair Fern, dozen bunches .. .. .	6	0	9	0	Tuberose, 12 blooms.. ..	1	0	1 6	
Marguerites, 12 bunches ..	3	0	6	0	Tulips, dozen blooms .. ..	0	6	2 0	
Mignonette, 12 bunches ..	3	0	6	0	Violets, Parme, French, per bunch .. .. .	4	0	5 0	
					Violets, Ozar, French, per bunch .. .. .	3	0	4 0	
					Violets, Victoria, French, dozen bunches .. ..	3	0	4 0	



## SPRING CROPPING.

IN drilling spring corn the advantage of "clean" land must not be forgotten. With it we can distribute the seed in the best way; without it the seed must be confined to drills far enough apart to admit of the use of both horse and hand hoes. The best way of sowing is to drill half the usual quantity of seed and then to cross-drill the other half—i.e., across the first drills at right angles to them. By this method we obtain the best possible plant over the entire surface of the field, the evenness and regularity of which is altogether superior to that from broadcast sowing, which depends so much upon the skill of the sower, and in any case can never be quite regular. Thick



*versus* thin sowing has been much discussed; each plan has its advocates, but we think a medium course usually answers best. The four points of most importance are clean well-tilled soil, thorough fertility, good seed, and careful sowing.

If the manure application has been left till now, then it is certain that chemical manures must be used. Of these, to have a compound manure in which all the essential elements of plant food are present, take per acre 1½ cwt. nitrate of soda, 3 cwt. mineral superphosphate, ½ cwt. steamed bone flour, ½ cwt. muriate of potash. This is a safe and perfect manure, more perhaps than is necessary; the only thing which may be dispensed with, however, is the potash for clay or heavy land, which usually contains enough of it. In the preparation of formula we have to make sure that there is enough of each of the indispensable elements of plant food—*i.e.*, nitrogen, potash, and phosphoric acid. Without analysis it is not easy to say if potash is required. Crops tell quickly enough, and we strongly advise our readers to watch growth closely in the coming spring and summer. If the spring corn is seen to be of a pale green or yellowish hue, it is probably owing to a want of potash; if it is certain that the soil is well drained, then it is positive that potash is wanted. If more potash or phosphates are used than is requisite for the crop or crops of the current year, we know that the soil is able to hold them in suspension for the benefit of other crops; but if we use a superabundance of nitrogen that is waste, because it is so liable to be washed down to the drains by rain water. Even in this matter we derive some comfort from the fact of an equivalent of nitrogen entering the soil from the air. By all means endeavour to avoid the wasteful use of manurial salts, but in any case it is better to err on the side of too much than too little.

It will thus be obvious to our readers that we regard the Oat crop, whether it be spring or autumn sown, as now being one of the most important and profitable crops grown upon British farms. It can be turned to account in so many ways, for horses, cows, store cattle, sheep, pigs, poultry; all like it, all thrive upon it, and any surplus is always to be sold at a profit, if only it is well grown. That is the point; strive to have only the best sorts on the farm, have them so well managed that your samples are of the best, and there will never be any difficulty about a market. As silage it is preferable to roots, being decidedly more nourishing, much less expensive to cultivate and to store; it keeps good twice as long as roots, and there is none of the uncertainty about it that there always is with roots. How frequently do we have to sow the same field of Swedes a second time owing to loss of plant from drought or insects! Then, too, the outlay for repeated hoeings, clearing, carting, storing, and slicing, is in the aggregate much higher than when silage is used. We press this matter upon the attention of all farmers as being one of several where reform means profit instead of loss. We have the highest authority in support of our advocacy of this change, as well as the dictates of prudence and common sense. Much Wheat straw has been cut into chaff for feeding cattle, and cows too, this winter, and though it is thus "chopped" to good purpose it must be regarded as inferior to Oat straw as food, and very much inferior to Oat silage. Of course there always must be a certain quantity of Wheat grown in home farms for flour, and for a supply of straw for the hunting and carriage horse stables, but that is a matter of detail, and does not affect the general question of farming economy. The general want of farmers now is crops that pay; certainly the Oat crop is one of them, and we shall do well now to consider advantages so possible, reform so profitable, and to make a radical change in a system of cropping which insists upon the persistent cultivation of crops from custom only.

#### WORK ON THE HOME FARM.

Very trying has the weather been for young weakly lambs. High wind, with frequent showers of cold rain and sleet, is a correct record of the weather day after day since writing our last note. Greatly do we regret saying that we have seen numbers of lambs out with the ewes in

the open, cowering under the cold blasts. Losses from such foolish exposure are a certainty; yet they are easily avoided by keeping the whole of them in a yard or fold, and in trough feeding for ewes, silage, chaff, pea straw in racks, some crushed oats, and a few lumps of rock salt suffice for all the requirements of the ewes. We give them no meadow hay; that is reserved for the dairy cows. Of course the shepherds ask for hay, and insist upon it as a necessity for the ewes, but so long as we have ample supplies of silage, with Pea and Oat straw, or even Barley straw, not a truss of hay do the sheep have, simply because they do not require it. Our dietary for the ewes is bountiful enough. They must be fed well if we would have the lambs well nourished and high condition sustained in the ewes; with this there must be shelter.

Losses of ewes and lambs from negligence either in feeding or in sheltering, or in both, are unpardonable. To say that a due provision of yards and folds for very large flocks is impossible is mere nonsense. If a man can afford to hire a grazing farm of two or three thousand acres, he should insist upon a reasonable provision of enclosures and hovels by the landlord, and do his part in the construction of temporary folds. To make the farm self-supporting preference is given to home grown food, but where circumstances justify the purchase of some food, let it be done. There is no profit possible now in half-fed animals. Lambs must be well fed from birth; they can then always be disposed of to advantage when they have served their turn upon the land.

Folding of hoggets and draft ewes upon poor upland pasture has gone steadily on all the winter, the snow never having been too deep for this work. The sheep as they become fat are gradually sold, and sold profitably too, and the pasture is so thoroughly enriched as to make plenty of rich herbage a certainty in the coming summer and autumn. Advantage was taken of low prices in the autumn to purchase sound store sheep largely for this important work of soil enrichment by means of judicious sheep folding.

FARMERY. — Mr. S. Nicholls, F.E.C.E., Albert Bridge, Battersea, sends us a circular of a very optimistic nature, announcing that he proposes to hold a consultation meeting at St. Martin's Town Hall, Charing Cross, W.C., on Tuesday afternoon, February 28th. Among other things he says:—"That meeting, *per se*, is intended to be quite unique in its character and procedure, and if possible, to be made profitable for the purpose of immediately promoting parochial honeypots and "farmery" combinations. Therefore I am wishful to meet, and be met, with kindness and courtesy by practically thoughtful landowners, farmers, clergymen, engineers, and mechanics having had some experience of agriculture; grist millers, chefs, and cooks (British) of either sex, and more particularly young men and women possessing natural gifts for material conception and constructive genius, with a view to qualify for 'farmery' duties, and thus become, as His late Royal Highness Prince Albert so aptly put it, princes and princesses amongst their country men and women." Then Mr. Nicholls makes the startling assertion that "Farm workmen could easily earn from £3 to £5 per week, and pile up mighty fortunes for their employers under parochial farmery methods of procedure."

#### OUR LETTER BOX.

**Poultry Farming (S. B.).**—Poultry farming pure and simple has never yet paid in this country, but combined with gardening, fruit growing, and dairying, it will pay its way well. Like every other business, poultry keeping must be learned, and you can only acquire the knowledge by starting with a few birds and carefully studying them, then as your knowledge increases so you can extend your operations.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

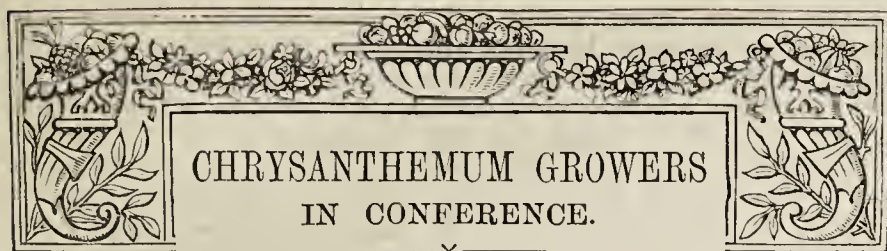
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1893. February.		Barometer at 32°, and Sea Level.	Hygrometer.		Diree- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	5	30.432	31.3	30.5	E.	39.4	36.3	26.8	48.0	21.0	—
Monday ..	6	30.400	29.5	29.5	Calm.	37.9	47.0	25.1	58.1	20.1	0.038
Tuesday ..	7	30.245	46.4	46.2	W.	37.1	53.0	28.9	80.1	26.8	0.064
Wednesday	8	29.917	43.9	41.7	W.	38.6	48.3	41.4	80.9	35.8	—
Thursday ..	9	29.940	40.1	38.9	W.	38.1	48.1	34.1	54.4	28.6	0.147
Friday ..	10	29.343	44.3	41.2	W.	39.0	51.8	39.3	81.8	34.2	0.046
Saturday ..	11	29.669	48.3	48.1	S.W.	39.9	50.0	43.1	56.6	38.1	0.183
		29.992	40.5	39.4		38.6	47.8	34.1	65.7	29.2	0.478

#### REMARKS.

- 5th.—Bright and sunny almost throughout.  
6th.—Fog early, dense from 9 to 10 A.M.; bright sunshine from 10.3 A.M.  
7th.—A little rain early; unbroken sunshine after 9.30 A.M.  
8th.—Heavy rain at 5.30 A.M., then overcast, but clearing after 10 A.M.; occasional sun from 11 A.M. and continuous bright sun in afternoon.  
9th.—Fair morning, with occasional sunshine early; almost continuous rain from 1.30 P.M., and gale at night.  
10th.—Gale with showers early; alternate sunshine and showers after 10.30 A.M.; clear night.  
11th.—Very wet from 8.30 to 11 A.M., then gleams of sunshine till noon, and generally overcast after.  
Not so warm as the previous week, but temperature still above the average.  
—G. J. SYMONS.





FOR some time past more than ordinary interest has been taken in the National Chrysanthemum Society, owing primarily, perhaps, to the opinions expressed by various correspondents in these columns. As the time for the annual general meeting of the members drew near this interest was considerably augmented, because it was known that at least one proposition regarding the adoption of a new rule, calculated to evoke much discussion, would be brought forward. Combining these and other items now known to most of our readers, many persons anticipated an unusually enthusiastic gathering, and as far as the audience was concerned, the most pessimistic attendant could not possibly have cause for complaint. The room, by no means a small one, was well filled, and whilst "waiting for the fray" a thrill of excitement doubtless ran through the veins of those most closely connected with the Society. But withal the meeting in certain respects was, no doubt, disappointing to some of the members. If we except one or two discordant notes which were struck, it was an ordinary, remarkably well conducted and rather quiet gathering of Chrysanthemum growers and admirers. It was nothing more, nothing less; and those who came full of vigour, and with more than a usual amount of buoyancy, expecting to hear eloquent expatiations and witness a "wordy war" were, as we have said, doomed to disappointment. True, many points were discussed, and consequently a little dissension arose, but beyond that nothing of an exciting nature occurred.

As signified elsewhere in the present issue, the annual report of the Committee gave general satisfaction, and from it we gather that the National Chrysanthemum Society, as far as numerical strength goes, is in a flourishing condition. There are at present 620 members on the books, no less than 73 joining during the past year. Of affiliated societies there are 100, and these facts, in conjunction with the work accomplished during 1892, are sufficient to give the surface a gilded appearance. But there is another side to the matter, and when the financial statement showed a balance of only 5s. 4d. to the good a murmur could be heard amongst the members. The receipts during the year amounted to upwards of £940, and the expenditure, as the cash statement showed, corresponded, leaving a very small balance in hand. This, too, notwithstanding, in the words of the Chairman, "a large accession of members and affiliated societies, distinctly attributable to the correspondence that has been going on in the *Journal of Horticulture*." This statement gives us more satisfaction than surprise, and proves that criticism, properly conducted, is beneficial. If it would assist the Society in obtaining still more members, and in collecting the subscriptions that are in arrears, we shall have pleasure in throwing our columns open for further correspondence. We should like very much to be able to record a better state of affairs as regards the present financial position of the Society. The Auditors, gentlemen of the highest standing, bore testimony to the able manner in which the vouchers had been prepared for them, and we have reason to believe that economy in the management has been strictly considered by the Executive. Still, as the Treasurer pointed out in commenting on the subject, it is deplorable that the balance is "only 5s. 4d." "The reserve fund," said Mr. Starling, "has not been kept up as

it should have been by a national Society." "Only 5s. 4d.," repeated the Treasurer; "is that a good position for such a Society to be in?" and albeit the bright picture which Mr. E. C. Jukes endeavoured to draw in referring to the arrears of subscriptions, a gloom for the time being appeared to hang over the meeting. Such is the position of the N.C.S. to-day. Let us hope it will, during the current year, rise to that eminence which the cause deserves, and secure the support of every Chrysanthemum grower in the country.

Relative to the infusion of "country blood" into the management of the Society, some points that could not be other than interesting to a casual observer arose, and particularly so prior to the election of the Committee. As has been discussed in this *Journal*, there is a desire amongst country members to share in the management, and all things considered this is a right and just claim. Several growers resident in the country were therefore nominated for election, but amongst such a strong metropolitan force it could hardly be expected that they would be successful in securing a place. Mr. Goodacre of Elvaston Castle, who was unable to be present, sent a telegram to the Secretary previous to the meeting suggesting the nomination of "some good growers, such as Messrs. W. Mease, P. Blair, G. Woodgate, and J. Lambert." In reading the telegram, however, Mr. Dean remarked that "Mr. Goodacre had written one or two rather warm letters in the *Journal of Horticulture*," and it was the opinion of a prominent member that such an announcement prejudiced many of the electors present. A similar instance occurred on the nomination of Mr. C. E. Pearson of Chilwell. At the election Mr. Blair secured six, Mr. Lambert three, Mr. Woodgate eleven, and Mr. Pearson fourteen votes; Mr. Mease is not a member, and his name was, therefore, withdrawn. Considering the fact that there were nearly a hundred present the results as to the votes accorded these few country members are significant. Apart from this, the system of electing is not exactly satisfactory, and we concur with Mr. W. H. Fowler that another method should be adopted. In accordance with the rules of the Society, no member is allowed to vote for more than twelve candidates, and therefore when this is done by simply showing hands there is no means of checking the electors if a large number of would-be committeemen are nominated. Nor is this all. Under the present system it is just possible that the names of twelve of the most popular candidates are read out, and these men duly elected before the remaining—the less popular—members are mentioned. Mr. Fowler suggested electing the Committee by ballot, which should be done, and we trust that the method will be adopted.

The feature of the meeting, however, was the attempt made by Mr. Addison to incorporate a new rule among the existing ones of the Society. This was the outcome of the "rather warm" letters that have been published in our pages, and was to the effect that "members guilty of dishonourable conduct, or conduct likely to bring discredit upon the Society, shall be subject to expulsion by a vote of two-thirds of the members present at any general meeting." The proposition, although ably put by the mover, met with general disapproval. The possibilities of libel actions arising out of such a rule, if it were adopted, were discussed with an enthusiasm that would have done credit to an assembly of lawyers. We pass no opinion on this matter; we simply record the facts, as we hitherto have done; but we do fail to see what honourable men have to fear, other than its then acknowledged necessity, even were such a resolution adopted. Mr. Jukes, in strongly opposing the motion, admitted that opinions differed, so much so, that "what one man would consider irregularity of conduct another man would think perfectly fair." That is so, it is the way of the world; and as other men, so are lawyers—they differ in their opinions. It is just possible that the adoption of a resolution as that referred to would not place the Society or the officials in such an awkward



position as is supposed; but, on the other hand, it is probable that a step of this kind would meet with the general approval of the country members. Mr. Addison, however, withdrew his motion, and Mr. W. H. Fowler suggested that he would bring forward a substitute proposition, to be worded by himself, the Secretary, and Chairman of Committee at some future time. This will be to the effect that members in arrear shall be struck off the list, making no provision for the expulsion or removal of members otherwise. There is now, perhaps, no necessity for the severer clause, as the lessons of the past will serve as excellent warnings for the future. Meanwhile, the matter rests *sub judice*, and, notwithstanding the small balance and large indiscretions, the National Chrysanthemum Society starts hopefully on what promises to be a successful year. We have no other wish than to strengthen the Society, and our desire is to see it enjoy the confidence of the whole Chrysanthemum community.

### THE PROPOSED INTERNATIONAL FRUIT SHOW.

It will be remembered that several meetings were held last year, under the presidency of Sir James Whitehead, Bart., M.P., with the object of organising a great Exhibition of fruit in London. It was proposed to hold this Show on a site near the Thames Embankment, and Her Majesty the Queen honoured the project with Royal Patronage.

After a few meetings were held in furtherance of the movement, and the terms of the schedule arranged, political turmoil ensued and diverted the attention of the nation. It was, in consequence, decided to defer the consideration of the subject till early in the present year.

At the first meeting that was held it was evident that the obstacles to erecting a building on the Thames Embankment were too formidable to be overlooked, and on the proposition of Mr. T. F. Rivers an endeavour was made to arrange with the authorities at South Kensington through Sir Somers Vine, Secretary, for holding the Show in the Imperial Institute, which is to be opened in May. The project was placed before Sir Somers Vine by Mr. Richard Dean, Secretary to the Fruit Exhibition Committee, and appears to have been long under consideration, for it was not until Monday last that the reply from the Imperial Institute could be placed before a meeting at Anderton's Hotel. Sir James Whitehead not arriving in time to take the chair, H. R. Williams, Esq., presided, and there were present Messrs. T. B. Haywood, Philip Crowley, J. Laing, G. Gordon, and J. Wright. After the correspondence was read, in which Sir Somers Vine announced the inability of the Commissioners to give a definite reply (with the view to arranging for the Show) till after the opening of the Imperial Institute in May, it was thought the time would then be quite inadequate to complete the necessary arrangements, even if the reply were favourable. Mr. J. Wright thereupon moved, on the grounds indicated, "That it is inadvisable to proceed with the Exhibition this year." This was seconded by Mr. T. B. Haywood and carried unanimously. Sir James Whitehead, who arrived immediately after the business was over, at once concurred in the prudence of the decision.

It may be presumed that the plethora of shows announced to be held in London this year, was an element not without effect in influencing the Committee in the spontaneity of their action; but be this as it may, the proposed Exhibition lapses at present and the project will no doubt be considered again at some future favourable opportunity.

### HARDY FLOWER NOTES.

WITH February the outdoor garden begins to acquire a fresh interest. With these longer and brighter days the memory of black frosts and their paralysing effect on vegetation begins to sink into oblivion. Not that they are absolutely forgotten, for here and there some luckless plants show tokens, all too evident, of the fierce ordeal they have undergone. Here and there, too, we see plants which, in ordinary seasons, are much further advanced, but this year have failed to keep their wonted time. Wonderful is it, however, to see the rapid progress which some of these are making now that mild weather has come to urge their growth.

First, of course, for notice are the Snowdrops—these "Fair Maids of February," which we have so eagerly longed for through the long frost. True, the Corfu Snowdrop, *Galanthus corcyrensis*,

under the shelter of a bellglass, has been with us since the end of November, but it hung its head and drooped to the ground as if in supplication that more genial weather might attend her flowering time. Now, however, its congeners of many kinds are rushing into flower with eager haste, and had I not so recently written at length of this flower, many would call for special note. But a brief mention can be made, however, although as I write they are before me in various forms and sizes, from a single flower of some of the rarer kinds to the common *G. nivalis*, showing their white blossoms at the base of a hedge, on the rockeries, or in the borders. Contrary to expectation this species came into flower only some two or three days later than last year, but its simple beauty is eclipsed by the large and fine *G. Imperati Atkinsi*, with its long blooms and taller stems, and by some of the best forms of the Bithynian *Galanthus*, or by the exquisitely formed flowers of some of the better varieties of *G. Fosteri*, now in bloom, from imported bulbs. But, as Lord Tennyson in "The Last Tournament" makes the "swarthy one" say:—

"The Snowdrop only flowering thro' the year,  
Would make the world as blank as winter-tide."

So other flowers claim our notice even at this early season.

There, on the slope at the base of a tree sheltered by a wall from the rude north wind, Miss Jekyll's Primrose Munstead Early White has been in flower well nigh all the last three months, and its pretty flowers have brightened an otherwise dull corner. Not that these flowers are of the highest order of merit from a florist's point of view. They are "pin-eyed," and neither of the best form nor of the largest size. There are few Primroses, however, which have so prolonged a season of flower, or which in spring so cover themselves with blossoms. This is what some growers who have not grasped the merits of the flower fail to understand. Munstead Early White was introduced as a "bedder" and as a winter bloomer, and by its fulfilment of these qualities must stand or fall. It is, with me, admirably adapted for these purposes.

On the rockery, with only the protection of a sheet of glass but open to the frost and wind, the delightfully pretty *Saxifraga luteo-purpurea* forms a dense mass of rigid foliage, which is ever attractive, and now is especially so when spangled with the pale but bright yellow buds now just opening. It grows readily on a rockery facing the south-west in a pocket filled with sandy peat and gritty gravel from the seashore containing a liberal proportion of broken shells. This gravel is also used for surfacing the soil for this *Saxifraga* and many other plants. It does not seem to be very generally known that the name of *S. Frederici Augusti*, under which appellation this plant was first introduced, is a distinct plant, and as yet rare in cultivation.

In another part of the rock garden *S. Burseriana major*, long delayed by the frost, is now bristling with buds, many of which are showing colour and will soon be in full flower. The whole appearance of these spring tufts, with their buds crimson when closed but crimson and white when half open, is very pleasing.

Near by are many flowers of the charming little *Cyclamen coum* from imported bulbs, which are this year earlier in bloom than established corms. Whether for the rockery, alpine house, or cold frame, this little plant, with its kidney-shaped leaves and crimson-purple flowers, forms one of the most pleasing objects of the garden. It is wonderful to see its recovery after the hard frost, when the leaves seemed to hang limp and lifeless and as if nothing could restore them to their natural beauty. Yet now these same leaves are bright and healthy looking again, and apparently none the worse for their season of trial.

One cannot pass on either without a word of praise for the white Heath, *Erica carnea alba*, which has since November been a picture of beauty on the top of a rockery, where it has full exposure. It has stood unscathed, and is now in full beauty, with its bright green foliage and its neat white flowers more plentifully produced than usual. In another part of the garden the type *E. carnea* is covered with its flowers, which are now assuming the pink colour which, with their wax-like texture, makes them so bright and attractive.

Another flower which came into bloom in the open in January, but which, through my carelessness in not protecting it with a zinc ring fell a victim to the raids of the slugs, which seem to find in it a toothsome morsel, is *Colchicum crociflorum*, which has pretty little white flowers lined with purple on the outside. Fortunately, however, the foliage does not seem so attractive, and another year one may hope to have better success. This *Colchicum* seems to increase very slowly. I have had mine for some seven years or so, and have as yet had no offsets.

The late character of the end of 1892 has much affected the flowering of the later Meadow Saffrons, and when the frost came *Colchicum pannonicum* and *C. latifolium* were still in flower. A sheet of glass on wire supports was placed over these, and the



flowers were by this simple means preserved, and now (February 3rd) are bright and fresh. Another one, *C. Decaisnei*, which in 1891 flowered in December, is now only piercing the soil preparatory to blooming. The yellow spring Meadow Saffron, *C. luteum*, has not yet appeared, but I hope to see its yellow flowers ere long.

The earlier *Croci* are unusually late, and *C. Imperati*, usually one of the earliest and best, is coming on but slowly, and to all appearance will not be long in advance of some of the others. Meanwhile *C. vitellinus* is the prettiest in flower outside where its yellow blossoms are much appreciated. A clump of *C. longiflorus* protected by a handlight, and one of *C. Thomassi* are still in flower. It is a pity that our winters are so stormy and so uncertain that we cannot enjoy these pretty flowers to the full in the garden.

Many of these *Crocus* species are, however, worthy occupants of a cool greenhouse or of the alpine house, and in my cool greenhouse *C. bannaticus* and *C. Korolkowi* have opened their blossoms in advance of those of the same species grown in the open garden. Very beautiful is the former, and the latter, of a curious dusky or tawny brown outside and yellow inside, forms a fitting companion for the fine, deep purple flowers of *C. bannaticus*.

The garden has now much of beauty in the way of foliage. Tufts of mossy verdure are shown by the Mossy Saxifrages and little mounds of silvery hue by the encrusted forms, besides the varied colours and tints of the flowering sisterhood now seeking to show that soon the glad time of spring will reveal to us that flush of beauty which she yearly brings. Thus, though the garden cannot as yet vie with the greenhouse with its forced Tulips, Narcissi, and the many flowers which its sheltering roof and its genial heat bring to view, it is at least not barren of interest; not a flowerless waste, but a spot where many gems may be seen and many lessons of beauty learned.—S. ARNOTT.

### PROPAGATING BEDDING PLANTS.

ALTHOUGH many strains of *Lobelias* come fairly true in habit and colour, it is still preferable to propagate from cuttings if a sufficient stock can be obtained to start with. Brighton Blue is, I think, still the best dark variety we have, and is largely propagated in many gardens, but I find it a great advantage to have also a stock of plants bearing flowers of a much lighter shade. I made an excellent selection last year out of a number of seedlings, and we are now getting strong cuttings from old plants potted in the autumn. These are inserted an inch apart in shallow pans containing a layer of sharp sand, without drainage or soil. The pans are placed in a close warm pit with bottom heat, where they root rapidly, and are then transferred to boxes filled with rich light soil; in these the plants are placed 3 inches apart, are again transferred to a close pit till growth is well advanced, when they are hardened off, and form good sturdy plants by bedding-out time. It is not necessary to spend time in cutting to a joint or trimming in any way, as they emit roots readily enough at any point when inserted. With the command of good bottom heat care should be taken not to allow the sand to become dry at any time, or when water is given the cuttings will decay under the surface of the sand, consequently many are led to think they have "damped" off on account of being kept too moist, whereas it is in reality the great change from aridity to moisture which has brought it about.

Other excellent methods of propagating are to insert cuttings in well drained boxes containing a layer of soil 2 inches in depth. These boxes can be placed on shelves or over the hot-water pipes. In either case the essentials to success are the maintenance of a temperature not less than 60° and uniformly moist soil; the latter condition is best maintained by light but constant syringings. When only a limited number of cuttings can be obtained and it is desirable to increase the stock as fast as possible, a handlight should be placed over the hot-water pipes or a flue in some warm corner; if a bottom is then formed of boards and an inch of sharp sand placed on the top, an excellent propagating case is obtained, in which limited space large numbers of cuttings may be quickly rooted if each batch is transferred to boxes as soon as growth begins.

*Coleus* are not generally wanted in very large numbers. A sufficient stock may therefore be readily raised by inserting the cuttings in 6-inch pots, these being well adapted for standing on hot-water pipes around Cucumber and Melon houses, positions in which they root quickly and with certainty. Bottom heat is the principle essential to success. If no better position presents itself than a vinery in which the temperature falls below 60° the cuttings ought to be placed under handlights, glasses, or frames. In all instances the plants should be placed into 3-inch pots when well rooted; they will then, in a short time, supply other good cuttings.

If these are not wanted for insertion they should still be removed to induce sturdy and compact growth.

*Alternantheras* are usually required in large numbers on account of the great beauty of their varied markings. I have frequently noticed when about to commence the propagation of *Alternantheras* that the growth made during winter becomes hard and wiry, producing flowers freely up the stems, and many of these ultimately develop into seed pods. It is useless to insert such pieces as these, for they never make satisfactory progress. The best way to deal with plants in this condition is to shorten all growths to within an inch of their base, rub off any flowers which are left, and plunge the pots in bottom heat, good strong soft cuttings are then quickly produced. These root freely in almost any position where the temperature ranges from 60° to 80°. When their propagation is carried on in vineries in which the foliage on the Vines is in an advanced stage, it is important to keep the boxes near the front of the house, or on shelves; otherwise many cuttings will be lost through damp. If a bed having pipes to supply bottom heat can be devoted to propagation purposes, thousands of plants may be speedily raised. A few inches of cocoa-nut fibre refuse, placed in the bottom, form excellent material to stand the boxes upon, or to plunge pots containing other cuttings in. When preparing compost for *Alternanthera* cuttings I like it to consist of one-half leaf mould and a similar quantity of old potting soil. This mixture induces a quick and somewhat soft growth, exactly what we require when raising large numbers of this type of bedding plants.

*Mesembryanthemum variegatum* requires a compost containing plenty of sharp sand or other gritty matter, and comparatively little leaf mould to insure the production of firm growth, which is not so liable to decay at the base as that grown in richer soil. Given good cuttings to begin with there should be no difficulty in rooting *Mesembryanthemums* without the loss through damp, which often occurs. Instead of being shaded from sunshine the cuttings should be placed in the full glare of it on shelves or stages near the glass, in a stove temperature, taking care that the soil is kept uniformly moist. Under such conditions 90 per cent. of the cuttings will root.

*Iresines* should, if possible, be placed in a close frame where there is good bottom heat, otherwise their soft leaves shrivel much, and progress is greatly delayed. *Ageratums* will succeed admirably when given conditions similar to those recommended for *Alternantheras*. They will, however, endure more shade, as damp seldom affects them.

*Fuchsias*, *Heliotropes*, and *Dahlias* root well in a temperature ranging a few degrees lower than the plants previously named require. In each case the cuttings should be kept close; bottom heat is an advantage, but not a necessity. The showy plants last named should, if possible, be taken off with a heel, and be placed singly in pots.

An excellent method of rooting Tuberous *Begonias* is to place cuttings singly in thumb pots, using loam and leaf soil in equal parts as the compost, and plunging the pots in fibre refuse where there is a slight bottom heat and a top temperature of 60°. If the house or pit in which they are located is kept close and moderately moist no additional covering of glass is necessary. No shade is required except in very bright weather.

Every one of the above plants may be propagated freely on a hotbed made up in the open air with a frame placed upon it, but it is essential that the heat should be kept regular by the addition of linings. As soon as there are signs of its decline sawdust or fibre refuse ought to be placed upon the bed as a suitable medium for plunging in, and also to prevent the heat escaping rapidly. It is not wise to begin the propagation of such tender plants as *Alternantheras* and *Coleus* in a manure bed till the beginning of March, because in very severe weather much covering is necessary to prevent heat escaping. The cuttings in consequence become weak and drawn through want of light, and too wet through drip caused by condensed moisture.—D. W.

### SILVER MEDAL ESSAY.

#### MANURES AND THEIR USES.

By Mr. G. A. BISHOP, *The Gardens, Wightwick Manor, Wolverhampton.*

THE constant removal of crops from the ground, and fruit from the trees and bushes, causes the removal of certain constituents which, if not restored, would eventually make the garden unremunerative. Gardens and fields thus robbed of their plant food are said to be exhausted, and the addition of the constituents which have been removed is what we know as manuring. In some cases the land is naturally poor; it may be especially deficient in some particular constituent which may be given to it in the form of manure. The manure



applied may, and does, act upon the constituents of the soil, decomposing them and rendering them soluble, when they can be utilised by the plant. A highly important effect of manuring is that it alters the physical character of the soil. Farmyard manure owes its value to a great extent to its mechanical action in dividing and pulverising the soil. Stiff land always works easier after liming, and the addition of marl gives greater consistency to sandy soils. A gardener or farmer should know before cropping his ground the constituents that a particular crop requires for its support, and whether these constituents are present there in a soluble state; if they are not, he should ascertain the best way of placing them in the ground at the least cost and trouble. If he has a thorough knowledge of these points it will prevent his wasting money in the form of applying manure for crops that may be of no practical value to them, and which could otherwise be more profitably used in the right place and at the right time to be serviceable.

Manures are generally divided into two classes. First, natural; and secondly, chemical. By natural manures we mean, or understand, the excrement of animals and residues of crops. These form the natural manures of the farm; with them we should, I think, include guano and the blood, bones, and other remains of animals. These form what we know as general manures—*i.e.*, those which supply the main portion of the losses of the soil, and therefore provide those requirements of plant life that are appropriated by the roots of trees and crops.

#### NATURAL MANURES.

**FARMYARD MANURE.**—This contains the excrement of the horse, cattle, sheep, and pigs, with litter. The value depends upon the method of treatment upon the animals producing it, and their food. It is the most valuable from fat and full grown cattle fed upon corn and cake, as they remove less from the corn and cake than young and lean stock do, or than cows do in production of milk.

**NITROGENOUS GUANO.**—This has been formed from the excrement of and remains of the bodies of sea-fowl. When fresh it is highly nitrogenous, and consists mainly of uric acid and calcium phosphate. In hot, dry climates the substance rapidly loses moisture, and the nitrogenous matter is preserved. This nitrogenous guano comes from Peru, Chili, South Africa, and Patagonia. It varies in its constituent parts, and contains from 3.5 per cent. to 14 per cent. nitrogen, and 12 to 20 per cent. of phosphorus pentoxide. Some samples contain potassium as potash sulphate.

**PHOSPHATIC GUANO.**—In moist and rainy districts the nitrogen is rapidly converted into ammonia, which is lost by evaporation and drainage, a phosphatic guano remaining. Phosphatic guanos have been, and are obtained from a great variety of sources, Bolivia, Australia, and the islands of the Pacific Ocean, especially contributing. They contain 30 to 36 per cent. of phosphorus pentoxide, and about 1 per cent. of nitrogen.

**BONES.**—Seldom used in the fresh state; they are usually steamed or boiled to extract the fat. They contain about the following percentage of nitrogen and phosphorus pentoxide.

	NITROGEN.		PHOSPHORUS PENTOXIDE.	
Fresh bones ..	3 to 4	per cent.	19	per cent.
Steamed ..	3	4	23	per cent.
Boiled ..	1	5	25	per cent.

Bones are applied to the land as kibbled about half inch fragments, as bone meal or flour, and as bone dust. They are also used in the production of superphosphates.

**DRIED BLOOD.**—A very valuable manure if used in a properly dried state. It contains much nitrogen which is readily available for the use of crops. The commercial article should contain 10 per cent. of nitrogen.

**MEAT MEAL OR MEAT GUANO.**—The residue from the manufacture of meat extract in South America, New Zealand, and Australia is so named. The composition depends upon the proportion of bones ground up with it. It contains from 6 to 13 per cent. of nitrogen and 1 to 17 per cent. of phosphorus pentoxide.

**HOOF AND HORN.**—These, with the residue after manufacture of combs and buttons, are ground up and form a valuable nitrogenous manure containing about 15 per cent. of nitrogen.

**SOOT.**—This is used as a top-dressing for corn and garden crops. It is very valuable when mixed with potting compost, and also with other manures in liquid form for watering various soft and hard-wooded plants. It yields about 5 per cent. of nitrogen.

**FISH MANURE.**—This is used when certain crops or plants that

require phosphorus and ammonia. Valuable for Vines, Peaches, and most stone fruit, and largely used for Chrysanthemums. Fresh sprats contain 63 per cent. of water, 2 per cent. of nitrogen, 21 per cent. of ash, which contains 43 per cent. of potash and 9 per cent. of phosphorus pentoxide. Fish offal is simply dried and powdered; it contains about 8 per cent. of nitrogen and 6 to 13 per cent. of phosphorus pentoxide.

#### CHEMICAL MANURES.

These include the great number of substances, most of which are rich in one, two, or most of the constituents necessary to be present in the soil; such as nitrogen, potash, phosphorus, and other elements or compounds.

**SODIUM NITRATE** occurs naturally in large beds in Chili and Peru, and is known as Chili saltpetre. This is one of the most important sources of nitrogen, probably the most important. The impure deposit called caliche contains about 50 per cent. of pure nitrate, and is purified by boiling with water; the liquid is allowed to stand till the solid impurities have settled, and is then run off into tanks, and the pure nitrate crystallises out from the solution. The commercial salt should contain 95 per cent. of real nitrate, and 15.65 per cent. nitrogen. This nitrogen is present in the form most readily assimilated by plants, and its great solubility renders it the most powerful and rapid of all nitrogenous manures.

**SALTPETRE OR NITRE** forms an efflorescence on the soil in hot climates, as in India. This efflorescence is collected and treated with water, in which the nitrate of potash dissolves. On allowing the liquid to stand the earthy and clayey matter subsides, the clear liquid is drained off and evaporated, when crude nitrate of potash remains.

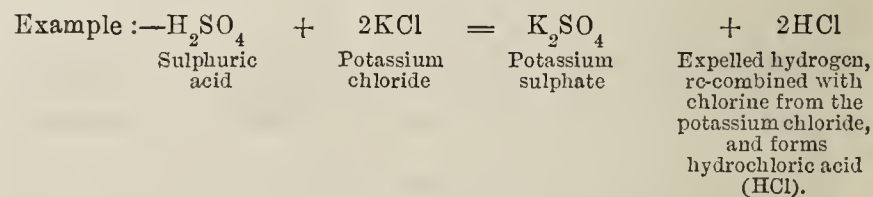
**POTASH SALTS (KAINIT).**—Crude potassium salts are generally used under the name of kainit, which is found as a deposit at Stassfurt in Prussia. A good sample should comprise the following ingredients:—

#### COMPOSITION OF KAINIT.

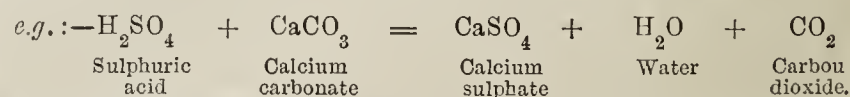
Water ..	3.36
Combined water ..	10.88
Sulphate of potash ..	24.43
Sulphate of calcium (gypsum) ..	2.72
Sulphate of magnesium ..	13.22
Chloride of magnesium ..	14.33
Chloride of sodium (salt) ..	30.35
Insoluble matter ..	0.71

For the benefit of readers not acquainted with the reading of chemical analysis, it will be clearer if I say when 100 lbs. of kainit is applied to a Potato or Carrot crop 24.43 lbs. of the 100 will be sulphate of potash, 2.72 lbs. sulphate of calcium, 30.35 lbs. chloride of sodium (common salt), and so on as is given in the analysis. Combined water is the water of crystallisation.

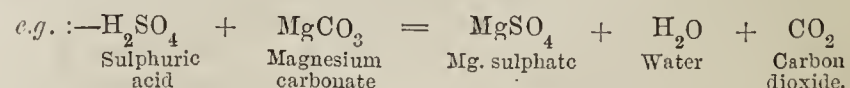
**POTASSIUM SULPHATE** ( $K_2SO_4$ ) is a compound where 2 atoms of potassium have displaced 2 atoms of hydrogen from sulphuric acid ( $H_2SO_4$ ).



**CALCIUM SULPHATE** ( $CaSO_4$ ) is also a compound, which occurs in nature, and is known as anhydrite, but a more usual variety of the sulphate is that termed gypsum. As will be seen, 1 atom of calcium displaces 2 atoms of hydrogen from sulphuric acid ( $H_2SO_4$ ).



**MAGNESIUM SULPHATE** ( $MgSO_4$ ).—This salt is found in nature combined with seven molecules of water, and is known as Epsom salts, soluble in water. A form combined with one molecule of water, known as kieserite, is very insoluble. Magnesium also displaces 2 atoms of hydrogen from sulphuric acid.



**MAGNESIUM CHLORIDE** ( $MgCl_2$ ) is a compound of magnesium and chlorine, it occurs in the "bittern," or mother liquor remaining in the purification of common salt, chloride of sodium.



**SODIUM CHLORIDE** (NaCl) is a compound of sodium and chlorine, and occurs plentifully in nature as rock salt, also in sea water. Sodium chloride is found in rivers, and small quantities in the air in all parts of the globe. Though these various compounds can be produced in the way I have shown (with a view of instructing the uninitiated) they also occur in nature by themselves or combined.

**AMMONIUM SULPHATE.**—This is procured mainly from gas liquor, an alkaline liquid, which is obtained as a by product in the purification of coal gas. This contains 4 to 40 lbs. of ammonia per 100 gallons; some little is also obtained from bone liquor. The liquid in either case is distilled (usually with lime), and the ammonia given off passed into saturators containing sulphuric acid; after a time ammonium sulphate crystallises out, and is collected with perforated ladles. In some cases the gas liquor is directly neutralised with sulphuric acid. The sulphate of ammonium so made is likely to contain ammonium sulpho-cyanide, which is very objectionable, being poisonous to plants. This may be detected by dissolving some of the ammonium sulphate in water, and adding to it a few spots of solution of perchloride of iron (obtainable from any chemist), a blood-red colouration is produced if ammonium sulpho-cyanide is present. Commercial ammonium sulphate is usually guaranteed to contain 24 per cent. of ammonia, which is equal to 93.18 of ammonium sulphate.

**BONE ASH.**—This is the residue, obtained when bones are completely burnt. The commercial article is mostly imported from South America, and usually contains 70 per cent. of calcium phosphate. The calcium phosphate of animal matter is more readily attacked by the solvents of the soil than the same compounds occurring in mineral phosphates.

**BASIC SLAG OR PHOSPHORIC SLAG.**—When steel is made by what is known as the "basic Bessemer process," the whole of the phosphorus in the pig iron used, sometimes 3 or 4 per cent., combines with the lime also used in the process, and goes into the slag, which contains about 50 per cent. of lime and an average of 17 per cent. of phosphorus pentoxide. This slag is ground into very fine powder, and passed through a sieve of 100 meshes to the inch linear. This is important. The oxide of iron, which is also present, is not found injurious to plants, as was at first expected. In 1887 over 500,000 tons of this slag was made in Europe, and nearly the whole was used as a manure. It is estimated that the phosphorus pentoxide in finely ground slag has half the manurial value of the same constituents in superphosphate.

#### ANALYSIS OF BASIC SLAG.

Lime .. .. .	50.0 per cent.
Magnesia .. .. .	4.0 "
Alumina .. .. .	2.0 "
Silica .. .. .	8.0 "
Iron oxide .. .. .	14.0 "
Manganese oxide .. .. .	5.0 "
Phosphorus pentoxide .. .. .	17.0 "

**SUPERPHOSPHATES.**—The naturally occurring phosphates of calcium, such as apatite, sombrerite, and coprolite, cannot be profitably used as a manure in the raw state, as they are very insoluble in water. By the action of sulphuric acid the greater part of these insoluble phosphates may be converted into an easily soluble form known commonly as superphosphates. Owing to its great solubility this forms the most satisfactory method of adding phosphorus to the soil. The effect is more marked when required for the needs of a particular crop rather than for the permanent improvement of the soil. Bones, bone ash, and animal charcoal are also converted into superphosphates in a similar manner. The following is an analysis of a superphosphate made from coprolites. The composition of superphosphates varies very much.

#### MINERAL SUPERPHOSPHATE.

Calcium superphosphate (soluble) .. .. .	19.47
Tri-calcium phosphate (insoluble) .. .. .	7.59
Calcium sulphate (gypsum) .. .. .	37.47
Water .. .. .	27.93
Silica .. .. .	4.07
Alkalis, iron oxide, &c. .. .. .	3.47

**PRECIPITATED PHOSPHATE.**—Certain phosphatic minerals are unfit for conversion into superphosphates. This may be due to the presence of objectionable constituents, such as ferric oxide, or alumina, or to the small quantity of phosphates contained in them. These minerals are treated with acid (sometimes after calcination), and the phosphates dissolved out; this is then precipitated with lime, chalk, or calcium sulphhydrate. The phosphate so precipitated stands next in value to superphosphate, inasmuch as some samples contain up to 40 per cent. phosphorous pentoxide. It is a very concentrated manure, and is much used on the Continent.

**CALCIUM COMPOUNDS.**—These are used under the form of chalk, lime, gypsum, and marl. They are especially useful on heavy land, upon land deficient in lime, peaty soils, and on those containing much vegetable matter.

(To be continued.)



#### NATIONAL ROSE SOCIETY.—"THE ROSE DERBY."

SURELY "a comedy of errors"—no better title could be given to the recent blunders committed by those responsible for the tactics and generalship of the "late land division" of our Rose army. One after another these leaders have fallen into the very traps which they fondly imagined they had so carefully laid for the discomfiture of the southern army.

First and foremost came the Rev. J. H. Pemberton "beating the air" with an attack on me, and here I may say I completely and unreservedly accept his explanation, even with its conditional "IF" in capital letters. Then came "J. B." (page 109) with a fable about Messrs. Hall and Whitwell, which "D., Deal," (page 131) has demolished in his own inimitable and convincing way; but the climax, and cream of the whole joke, I think, is in the fact that in your issue of this week "W. R. Raillem" (page 131) has fallen on and slaughtered one of his own party. Poor "J. B.!" he must feel quite demolished, smitten hip and thigh on the same day, not only by the ephemeral southerner, but also by the more hardy northerner—even his own familiar friend. "Et tu, Brute!" However, to finish with another quotation from Shakespeare, let us still hope that "all's well that ends well."—CHARLES J. GRAHAME, *Croydon*.

#### N.R.S. FIXTURES.

I AM glad to see the note from "D., Deal," (page 131) *re* the retirement of Messrs. Hall and Whitwell, but can assure your correspondent that the reason I mentioned is the one constantly assigned at the time by members of the National Rose Society. When such able practitioners suddenly cease their efforts a certain amount of curiosity is naturally felt as to the cause, and all of whom I inquired about it gave the reason I stated, and as it seemed a very likely one I supposed it was correct. I am sorry now to learn that it was rather lack of "staying powers."

#### TEAS IN MIXED CLASSES.

My whilom opponent, "W. R. Raillem" (page 131) rather misses the point of my complaint. I do not mean that there were any "especial favour" shown to the particular blooms of Teas exhibited, though I do know very excellent judges who hold that Teas *per se* are always more deserving of honour than H.P.'s, but that boxes of Teas exclusively being allowed to compete in the mixed classes constitutes an "especial favour" to Teas, which is not enjoyed by H.P.'s. One portion of the schedule is headed "Tea and Noisette Division," and it surely does not need any argument to prove that *that* is the place for boxes of these varieties only. If this division did not exist I should consider it "especial favour" if H.P.'s alone were allowed to win, but with the ample provision thus made for Teas only I still think that such boxes should not be allowed in the so-called mixed classes. In the case of H.P.'s cited by "W. R. Raillem" it was quite natural that the "Tea men" should not complain, because they had the entire division to themselves in which not a solitary H.P. might appear.

My reply to your correspondent's last question is that at present I should not like a rule that there must be some Teas in the mixed boxes, but I should like to see one class in each of the sub-divisions A to F for H.P.'s only (of course I know of the classes for 12, 9, and 6 of one H.P.) and then I would insist that stands in the mixed classes should contain both Teas and H.P.'s. I hope to see some such arrangement in the schedule for 1894.—J. B.

#### DISCUSSION ON POTATOES.

##### THE BRUCE.

It is very evident that Potatoes, like Apples, are not suitable for all soils; by this I mean varieties growing on heavy land in one place appear totally unsuited for similar soil in another district. I see, on page 116, Mr. E. Molyneux says the Potato under notice does not produce tubers of first-rate quality in his district. Now, my experience teaches me that The Bruce is one of the best varieties we have in the market. I quite agree with Mr. Molyneux, that it is a form of Magnum Bonum. Mr. Findlay of Markinch, the raiser, says it is the result of a cross between Paterson's Victoria and Late Rose, so it will be seen by its parentage that the quality comes from the former variety. It is a heavier cropper than Magnum Bonum, and the flavour is far superior to that variety. On my heavy soil the tubers turn out well, and when cooked they are like balls of flour. The market growers on the north side of London have almost discarded Magnum Bonum in favour of The



Bruce. As a disease resister it stands unique. Every grower who has bad Potato soil should give this variety a trial.—J. B. RIDING.

#### LADY TRUSCOTT.

UNTIL reading the article (page 105) by Mr. Fenn, I was not aware that the above Potato was one of his raising. I have said much in favour of Ringleader, another of his raising, and I cannot, or ought not, to say less of Lady Truscott. With me good white round Potatoes of the best cooking quality are not over-plentiful, but Lady Truscott is simply grand, coming in after the second early. It might, I suppose, be called a midseason variety. I have grown it for some years, and hope to do so many more yet. Quite recently I sent for a change of seed, which is quite the best thing to do where the soil is not of the best for Potatoes. The tubers are not large, but when cooked are particularly white, and of excellent flavour.—E. M.

#### PLANTING LATE POTATOES.

I DO not think the advice given by "O. C." (page 116) as to the late planting of main crops, will be universally accepted as being the best. Many persons put these in first, finishing with the medium kinds; but as "O. C." does not tell us what he calls "late," it is hard to say when they should be planted in his opinion. I have seen many acres of Potatoes spoilt through not planting the tubers early enough. When the planting of such sorts as Magnum Bonum, for instance, is left until the second week in May what chance is there for the haulm to develop? The middle of April is a much better period to plant field Potatoes, especially where the soil is heavy. There need be little fear of blanks if the sets are properly chosen.—S.

#### STORING POTATO SETS.

As "O. C." (page 116) rightly points out, much of the success or otherwise of the Potato crop emanates from the manner in which the sets are stored. In many gardens these cool structures are not available where a number of seed tubers can be stored. My plan is to dig the Potatoes on a fine day, and allow them to lay two or three hours in the sun before storing. We place them in heaps in the Mushroom house for a month or so until that structure if required for its legitimate use. The Potatoes are then pitted, a layer of straw separating one sort from another. Once during the winter the tubers are turned over, choosing a dry day, which dissipates any moisture that may have collected about the sets. Any growths that have formed are removed. By the end of February the Potatoes are ready for removal to the "sprouting" place, some of the early sorts having been taken out in January. The shelves in the fruit room are utilised for "setting up" the Potatoes, choosing a position as near to the window as possible, so as to afford both light and air as a means of inducing the growth to be sturdy. I like to have the sets with shoots half an inch long at planting time.—M. P.

#### CANKER IN FRUIT TREES.

(Concluded from page 132.)

IT will be seen from the following table the importance of applying manures to benefit fruit in the first stages of swelling is paramount, as a large proportion of the mineral matter contained in the Apple is stored up during the early part of its growth:—

#### "ANALYSIS OF BEN DAVIS APPLES IN THREE STAGES OF GROWTH. ACTUAL QUANTITIES AND PROPORTIONS PER CENT.

	Unripe Apples. July 9th.	Ripe Apples. October 23rd.	Small Apples. October 23rd.
	Grains.	Grains.	Grains.
Average weight of whole fruit ..	47.70	215.00	70.40
Weight of flesh in fruit .. ..	—	201.00	67.70
Weight of core in fruit .. ..	—	14.00	8.70
Weight of ash in fruit .. ..	5.51	4.03	4.81
	Per cent.	Per cent.	Per cent.
Amount of flesh in fruit .. ..	—	93.40	87.60
Amount of core in fruit .. ..	—	6.60	12.40
Ash in whole Apples .. ..	0.29	0.27	0.31
Carbon in same .. ..	2.35	6.04	0.52"

The following table, taken from the same source as the preceding, namely—"Bulletin of the Missouri (Columbia) Department of Horticulture," shows an equal weight of small inferior fruit extracts more substances from the soil than does the large, and still further points to the importance of supplying soluble manures and early, so as to get the most value out of them—secure it in the fruit.

#### "MINERAL CONSTITUENTS OF BEN DAVIS APPLES IN THREE DIFFERENT STAGES OF GROWTH.

Per-centage quantities and actual quantities in 10 bushels of fruit.

	Unripe Apples. July 9th.	Ripe Apples. Oct. 23rd.	Small Apples. Oct. 23rd.
	per cent. oz.	per cent. oz.	per cent. oz.
Silica .. ..	0.58 0.13	1.23 0.26	2.16 0.59
Ferric oxide .. ..	0.47 0.11	0.46 0.11	0.66 0.18
Phosphoric acid .. ..	8.96 2.07	8.20 2.23	8.73 2.39
Lime .. ..	6.85 1.53	5.66 1.21	8.85 2.42
Magnesia .. ..	4.80 1.11	4.30 0.92	4.73 1.30
Potash .. ..	54.02 12.49	56.74 12.12	52.44 14.35
Soda .. ..	2.10 0.49	1.94 0.41	2.03 0.57
Undetermined .. ..	22.22 5.14	21.47 4.50	20.62 5.56
Total .. ..	100.00 23.12	100.00 27.76	100.00 27.36"

If 10 bushels of fruit is the full produce of an Apple tree at its best, and there being seventy-five trees per acre, at 24 feet apart, No. 1 sample has abstracted by July 9th 10 lbs. of phosphoric acid, 7¼ lbs. of lime, and 52¼ lbs. of potash. No. 2, ripe Apples, 10¼ lbs. of phosphoric acid, 5½ lbs. of lime, and 56¾ lbs. of potash; and No. 3, small Apples, 11 lbs. of phosphoric acid, 11¼ lbs. of lime, and 67¼ lbs. of potash. The worthless trash (small Apples) abstract more phosphoric acid by three-quarters of a pound, 5¾ lbs. more lime, and 10½ lbs. more of potash than the same quantity per acre of full grown, marketable fruit. That is another reason why the produce of neglected orchards present such a deplorable figure beside imported fruit in the markets—namely, waste the resources of the soil on a worse than useless crop. The fact is, the culture of 99 per cent. of the orchards in this country has for its sole object soil exhaustion, for very few get anything returned to the soil. Yet the clamour is for protection—make consumers buy rubbish. Never!

The following analyses by Herr F. F. Schutt show the importance of an early supply of food elements. The analyses are given in "Biedermann's Centralblatt," 1892, and in the *Gardeners' Chronicle* show the components of Apple tree leaves on the dates given in the table.

	May 25th.	Sep. 20th.
	Per cent.	Per cent.
Constituents:—		
Water .. ..	73.36	60.71
Ash .. ..	2.33	3.46
Nitrogen .. ..	2.94	2.48
Composition of the Ash:—		
Phosphoric oxide .. ..	10.47	5.82
Potash .. ..	10.82	11.63
Lime .. ..	17.40	27.91
Magnesia .. ..	9.77	4.81
Iron oxide .. ..	1.49	1.41
Silica .. ..	1.07	1.14

The only ingredients worth noting are the phosphoric acid, potash, lime, and magnesia, except the nitrogen. All the analyses tend to confirm M. Ville's statement that only nitrogen, potash, lime, and phosphoric need be added to any soil in the manure. It appears, however, from the above analysis that magnesia is an important element in Apple tree leaves, and points to the necessity of supplying it to Apple orchards, therefore the value of kainit as a manure in supplying that element, and soda as well as potash. A deficiency of magnesia may in some soils have something to do with the tendency of Apple and Pear tree leaves, shoots, and fruits to attacks of scab fungus (*Cladosporium dendriticum*). But scab in Apples and cracking in Pears is worst in heavy soils where there is the largest per-centages of magnesia, therefore the evidence is in favour of the fungus being the cause, and nothing but the fungus.

Analysis of the wood and whole fruit of the Apple are given below.

	Wood.	Fruit.
Potash .. ..	19.24	35.68
Soda .. ..	0.45	26.09
Magnesia .. ..	7.46	8.75
Lime .. ..	63.60	4.08
Iron .. ..	0.07	1.40
Phosphoric acid .. ..	4.90	13.59
Sulphuric acid .. ..	3.29	6.09
Silicic acid .. ..	2.06	4.32

Nothing in these analyses show cause for deviation from the acknowledged principle of manuring fruit trees. However opinion may trend to the total replacement of natural by artificial manure in agriculture, it can never apply exclusively to fruit culture, for in the former there is always a large proportion of residues in roots and other parts of the crops in the soil; consequently there is no impoverishment by the use of chemical manures, but an actual increase of organic matter. In fruit growing there is no crop residue, except in orchards in grass, or in others in the shape of weeds; therefore those that recommend the complete discarding of stable or farmyard manure, and reliance solely on artificial, make a mistake. Nevertheless, a judicious displacement of natural manure by artificial has proved advantageous to the crops and a saving to the cultivator.

Bone superphosphate, by supplying phosphoric acid and lime in a soluble form, heads the list of suitable manures for fruit trees. Thomas' phosphate, or basic slag, also contains phosphoric acid largely (18 per cent.), and lime in a sufficiently soluble form where there is organic matter, as in gardens generally and new ground being prepared for planting with young trees, also for orchards in grass.

Potash can only be supplied economically in kainit, and no soil needs a supply except those deficient, the light and exhausted. Nitrate of potash is far too dear for general use, and the artificials employed in gardens often cost more than the crops are worth; but those that will have superlative products must not begrudge the extra means.

Nitrogenous manures come next in M. Ville's recommendation, and complete the list of what he considers necessary to apply to soils for the economic production of fruit. Sulphate of ammonia may suit good loams and heavy soils, but nitrate of soda is better for calcareous and light soils, if not for all, under judicious management, while none are so disastrous to the hardness of the trees where it is used injudiciously. It must always be applied to fruit trees during their growth and in the first half of the fruit swelling. Applied to trees already making enough wood it does no good, but harm; and supplied after July it only tends to a late growth, which being soft and the winter severe is often crippled—many trees for life.—G. ABBEY.





## MAXILLARIA PORPHYROSTELE.

THOUGH inferior to *M. grandiflora* and *M. venusta* the above species is by no means unattractive. It is a free-growing plant, resembling *M. picta* in general appearance; but the flowers are smaller, and lack the purple and chocolate spots on the petals and sepals. The pseudo-bulbs are orbicular-ovoid, and bear each a pair of dark green leaves about 5 to 7 inches in length and half an inch broad. The flowers are produced in profusion in early spring; they are about 1½ inch broad, of a uniform greenish-yellow colour with a purple column and streaks of the same colour on the lip and at the base of the petals. It is a native of Brazil, from whence it was introduced by Mr. Bull of Chelsea about 1873. It is figured in the "Botanical Magazine," t. 6477. A large plant is now flowering at Kew.

## SOBRALIA SESSILIS.

Plant of this uncommon, but exceedingly pretty *Sobralia* are now flowering at Kew. Though it is an old species, having been introduced from British Guiana by Schomburgk about 1840, it is still but rarely met with. This is no doubt due in a large measure to the short duration of the individual flowers, a circumstance which unfortunately militates strongly against the popularity of all *Sobralias*. It is a comparatively dwarf species, the stems being only about 2 feet in height. The flowers are produced from the top of the stem singly, but in quick succession. Unlike the well known *S. macrantha*, the stems of *S. sessilis* continue to grow and flower for several years. The flowers, though not so large as those of *S. macrantha*, are no whit less beautiful. The sepals and petals are white slightly tinged with rose; the funnel-shaped lip is rosy-pink with a faint touch of yellow. It is a free-flowering species, and possesses the further merit of blooming during the winter months.

## CÆLOGYNE FLACCIDA.

The specific name of this *Cœlogyne* refers to the drooping character of the inflorescence. The racemes are many-flowered and of considerable length, the flowers being set rather widely apart. The flowers are white, except the lip, which has the yellow blotch common to most *Cœlogyne*s. The pseudo-bulbs are 4 to 5 inches in length, the dark green lanceolate leaves which are produced in pairs are from 8 to 10 inches long. The plant has an erect habit of growth, and when in flower is very attractive. The flowers are produced very freely in winter and early spring, and last a long time in full beauty. *C. flaccida* requires an intermediate temperature—the *Cattleya* house suits it very well—and should be well rested. It was introduced from Nepal by Dr. Wallich, and first flowered at Wentworth in 1833. A plant is now in flower in the warm Orchid house at Kew.

## CÆLOGYNE ODORATISSIMA.

This graceful little Orchid was introduced to cultivation about the year 1863, and first flowered in this country in the Kew collection. It is a native of the Nilgiri Hills, where it is found growing on the trunks and branches of trees, or among stones and wet moss on the northern side of the hills. It is also found in Ceylon. It is a very dwarf species, the pseudo-bulbs being only about 1 inch high. The leaves are about 4 inches in length, and of a light green colour. The raceme, which is produced from the top of the pseudo-bulb between the young leaves, is slender and drooping, and bears about three flowers. The latter are pure white, except for a blotch of yellow on the lip, and are very sweetly scented. It is figured in the "Botanical Magazine," t. 5462.—A. B.

## PHALÆNOPSIS × INTERMEDIA, VAR. VESTA.

IN the hybridisation of Orchids the unexpected frequently happens, and, says "The Orchid Review," especially has it been so in the present case. The beautiful *Phalænopsis* × *intermedia* was long suspected to be a natural hybrid between *P. Aphrodite* and *P. rosea*, and this was at length proved by Mr. Seden by

artificial crossing. He afterwards fertilised *P. rosea* var. *leucaspis* with the pollen of *P. Aphrodite*, and the result is quite a distinct form of *P. intermedia*. *P. rosea leucaspis* differs from the type in having smaller flowers with shorter and broader segments, and the petals darker in colour than the sepals, and these characters are impressed on the hybrid, which differs from *P. intermedia* in much the same way. The flowers are smaller, the petals more distinctly rhomboidal, and the two teeth at the apex of the lip are straight, not curved inwards. The whole flower is of a lovely rose-purple, and as regards colour exceptionally distinct. This new acquisition was exhibited by Messrs. James Veitch & Sons at the meeting of the Royal Horticultural Society on January 17th last.

## SELENIPEDIUM × PHÆDRA.

This is a new hybrid, raised by Messrs. James Veitch & Sons of Chelsea, and the first to flower, in which the stately *S. Lindleyanum* of Mount Roraima is connected by hybridisation with its congeners of the Andean Cordilleras. *S. × Sedeni candidulum* was the seed parent, and therefore three distinct species are concerned in the parentage and the resulting progeny is one of the handsomest hybrids in the genus. The leaves are nearly as broad as in *S. Lindleyanum* and shorter than in *S. × Sedeni*, and the flowers larger than in either parent. Dorsal sepal 1½ inch long, oblong, obtuse, undulated at the margin, cream white, mottled with light rose to two-thirds of its length; lower sepal very broad, nearly sub-orbicular, concave, yellowish white; petals broadly linear, deflexed and undulated, about 3 inches long, light rose-pink with a white median line; lip helmet-shaped, bright rose-pink, the unfolded lobes yellowish white with a few crimson dots. Staminate yellowish white, fringed with crimson hairs at the back. It



FIG. 27.—CYMBIDIUM GRANDIFLORUM.

is a decided acquisition. It was awarded a first-class certificate by the Royal Horticultural Society on January 17th last.—(*The Orchid Review*.)

## CYMBIDIUM GRANDIFLORUM.

WHEN exhibited at the Drill Hall on February 14th by Messrs. F. Ross & Co., *Cymbidium grandiflorum* (which fig. 27 represents) caused considerable comment and awakened much admiration. It has large size combined with pleasing colouring. The sepals and petals are of a dull pea-green with brownish dots towards the base. The lip is white, spotted with brown and clearly, although not deeply, margined with green. It is alike distinct and beautiful.





**EVENTS OF THE WEEK.**—Apart from a meeting of the Royal Botanic Society on Saturday, February 25th, but little of horticultural interest will take place in the metropolis during the ensuing week. The Linnean Society meet on Thursday, March 2nd, and the customary auction sales will take place, as specified in the advertisements.

— **THE WEATHER IN LONDON.**—Changeable weather has again characterised the past week. Sunday was fine, mild, and springlike. Monday also proved mild, but with occasional showers, rain falling heavily in the evening. On Tuesday it rained more or less for most of the day, the barometer, as mentioned in another paragraph, being very low. On Wednesday morning snow and rain fell, and at the time of going to press it is damp and cold.

— **WEATHER IN THE NORTH.**—With occasional touches of early morning frosts, a little sunshine, and much rain, the week ending the 14th inst. has been variable, and on the whole unpleasant. The thermometer has ranged from 28° to 42° during the nights. Sunday and Monday were fine for the greater part, but the evenings of both were wet.—B. D., *S. Perthshire*.

— **THE ROYAL GARDENERS' ORPHAN FUND.**—The Secretary of the Gardeners' Orphan Fund informs us that Her Majesty the Queen has been pleased to command that this charity shall in future be called the "Royal Gardeners' Orphan Fund."

— **LOW BAROMETRICAL READINGS.**—There was a remarkable fall in London barometers on Tuesday last. The reading was at one time of the day 28·68 inches, the lowest point attained since November, 1891. Readings such as this are undoubtedly rare, although it is seldom that twelve months elapse without the barometer falling below 29 inches. The lowest barometer readings observed at the Kew Observatory within recent years have been as follows:—1886, December 9th, 28·31 inches; 1884, January 26th, 28·54 inches; 1876, December 4th, 28·38 inches; 1876, March 12th, 28·47 inches; 1873, January 20th, 28·47 inches; 1872, January 24th, 28·34 inches. The lowest barometer readings on record in various parts of the globe are as follows:—In London, a reading of 27·93 inches on the morning of Christmas Day, 1821; over the British Islands generally a reading of 27·33 inches, at Ochertyre (near Crieff) on the 26th January, 1884; and 27·12 inches at False Point, near the southern mouths of the Ganges, on the 22nd September, 1885, this being the lowest authentic reading observed in any part of the world.

— **THE EARLIER OPENING OF KEW GARDENS.**—Mr. Shaw Lefevre, the First Commissioner of Works, has definitively decided against the earlier opening of Kew Gardens. Mr. Shaw Lefevre, in his final letter, stated that the question had been fully considered by the Government in the preparation of the Estimates, but in view of so many other claims on the public purse and the expense which it would involve it was impossible at the present time to entertain the proposal for the earlier opening of the Gardens. The gates, therefore, will still remain closed to the public until mid-day, which many regard as an unreasonably late hour, and the suggestion of the Richmond Town Council and other local bodies was that the time should be altered till ten o'clock to meet the convenience of visitors generally. It is probable that the matter will be brought forward in the House of Commons upon a discussion of the Estimates.

— **PEACH STOCKS.**—Mr. Dean showed me in one of his houses at Titsey Park a large tree of Violet Hâtive of which he remarked that a few years ago he found that it flagged very much, especially in the early morning. The border was examined and found to be in good condition, and all the surroundings were such that no cause for the evil could be discerned. The tree was on a stock worked some 2 feet from the ground; at length, one day it suddenly occurred to him that perhaps it was the stock that was in fault—that, in fact, it was choking or starving the tree because it was too narrow, or restricted a channel for the conveyance of sap. He at once took out his knife and made an incision right through the bark the length of the stock. The result was, he said, that the bark literally opened with a yawn, giving relief that it was evident was badly needed. Since then there has been no sign of flagging.—D.

— **BOTANICAL SOCIETY OF FRANCE.**—We understand that M. P. Duchartre has been elected President, and M. L. Guignard first Vice-President, of the Botanical Society of France for the current year.

— **IMPORTED APPLES.**—According to the latest returns, 209,262 bushels of Apples were imported into this country during January. In the corresponding month of last year the importations of Apples reached 326,826 bushels.

— **GARDENING APPOINTMENT.**—Mr. Edward Parry, for nearly two years general foreman in Downton Castle Gardens, Ludlow, has been appointed head gardener to G. A. Tonge, Esq., Castlemanns, Twyford, Berkshire.

— **FOREIGN POTATOES.**—It is interesting to note that whilst France sent us 83,901 cwts. of Potatoes last month, only 618 cwts. were derived from Germany. During January, 1892, 62,369 cwts. were obtained from France, and but 23 cwts. from Germany.

— **LONDON PANSY AND VIOLET SOCIETY.**—A meeting of this Society will be held at the Guildhall Tavern, Gresham Street, E.C., on Tuesday evening, the 28th February, at seven o'clock. All interested in the matter are invited.—GEO. MCLEOD, *Hon. Sec.*

— **DEATH OF A FAMOUS ORNITHOLOGIST.**—Ornithologists will regret to hear that the Rev. F. O. Morris died recently at Nunburnholme, in Yorkshire, at the age of eighty-two. He was well known as a popular writer on science, and did much to create and foster interest in some branches of natural history, especially in ornithology.

— **JOHNSON'S GARDENERS' DICTIONARY.**—Messrs. G. Bell & Sons announce an entirely new edition of this handy yet copious dictionary. The work, which has been before the public for forty-seven years, has now been thoroughly revised and considerably enlarged under the able editorship of Mr. C. H. Wright and Mr. D. Dewar. It will be issued in eight monthly parts at 1s. each, commencing on the 1st of March.

— **HORNED CINERARIA.**—The enclosed flower, taken from a plant of Cineraria grown by me from home-saved seed, exhibits a peculiarity which I have not before noticed—viz., in each petal two horns appear, recurving, in most cases, towards the centre of the flower. Every flower on the plant exhibits the same peculiarity. I shall be glad to know whether any other instance of this variation from the normal has come under the notice of your readers.—CHARLES E. SHEA.

— **WELLINGTONIA GIGANTEA AS A WIND TREE.**—It would be well if all intending planters of this tree were aware how badly it is adapted for planting in positions exposed to south-west winds. Two specimens were planted in the park here twelve years since, and they are now about 15 feet high. The south-west side of each is very much disfigured, one being entirely spoilt. I have known this tree recommended as being wind-proof, but in my case this is utter fallacy. I find this Conifer enjoys shelter and much moisture.—E. M., *Swanmore Park*.

— **HINTS TO FRUIT GROWERS.**—The Board of Agriculture have issued an illustrated fly-sheet giving useful hints as to the detection and treatment of the Black Currant mite (*Phytoptus ribis*). Complaints as to the prevalence of this mite in the Black Currant plantations have been received recently from many parts of the country. In some districts this infestation has spread so rapidly that at least 50 per cent. of the buds are full of mites, a much larger proportion being affected in one plantation of 20 acres in Kent recently visited. Buds so attacked are rendered abortive, or at least fruitless.

— **WALKLEY (SHEFFIELD) AMATEUR FLORAL AND HORTICULTURAL SOCIETY.**—Mr. W. Hannah, at a recent meeting of this Society, read a practical and useful paper on "Gardening," in which he gave many useful hints on the laying out of flower gardens, pleasure grounds, and vegetable quarters, supplemented with interesting information on planting, sowing, and management of the principal crops in the kitchen garden. Mr. John Haigh presided. Mr. Thos. Gartery of Rotherham, at a subsequent meeting, read a practical paper on "Seed Sowing," dealing with vegetables, hardy annuals, perennials, half-hardy annuals, and tender annuals. He remarked that the subject was a wide one, and could scarcely be adequately dealt with in a single essay. He, however, touched briefly on the importance of the proper sowing of the various kinds of seeds, and pointed out that the seedsman was often blamed for supplying an inferior article when the real reason lay in wrong methods of sowing. Thick sowing he particularly condemned. Mr. W. G. Cuckson (the President) occupied the chair.



— **DEATH OF MR. ERNEST BENARY.**—We regret to announce the death of the world-famed seed grower, Mr. Ernest Benary of Erfurt, who passed quietly away after a short illness on the morning of the 19th inst. Mr. Benary was a gentleman of great business capacity and social geniality, and widespread will be the sympathy with his relatives in their great bereavement. Mr. Benary was seventy-four years of age.

— **FOREIGN FLORA.**—Prof. R. Shimek is now investigating the flora and the geology of Nicaragua, along the route of the canal, under commission from the State University of Iowa. Dr. Terracciano, of Rome, is about to renew his investigation of the flora of Erythrea, the Italian colony on the Red Sea. Dr. K. N. Denckenbach is commissioned by the Natural History Society of St. Petersburg to investigate the flora of the Black Sea.

— **TADCASTER PAXTON SOCIETY.**—At a meeting of the above Society, held last Thursday, February 16th, a paper on "Allotment Gardens" was read by Mr. Clayton of Grimston Park Gardens. The various profits derived from allotments by the holders were detailed, also the physical and social benefits accruing. A unanimous vote of thanks was accorded to Mr. Clayton for the able manner in which he had dealt with his subject. Mr. Jewitt (who is leaving the locality) resigned the position of Secretary, and Mr. A. Garnett was elected to the position.

— **FRUIT AND VEGETABLE TRADES.**—On Tuesday last an influential deputation, representing the growers and salesmen of Covent Garden, Farringdon, Spitalfields, Borough, and other vegetable and fruit markets in London, waited upon the Lord Mayor at the Mansion House to ask his assistance in establishing a benevolent institution and fund in connection with their trades. The deputation was introduced by Mr. J. S. Daniels, and the request was supported by Mr. G. Coleman and others. The Lord Mayor, in the result, accepted the invitation of the deputation to preside at the forthcoming festival dinner of the London Wholesale Fruit and Potato Traders and Growers' Benevolent Society on March 22nd, when it is proposed to bring the scheme prominently before the trade and the public.

— **GLOXINIAS ALL THE YEAR ROUND.**—It is very evident that with ample stock it is easy to have these at command. A sowing of seed made now will give an abundance of plants to bloom through the late summer and autumn. Older tubers now at rest and potted as late as can be, kept cool all the summer, and then placed on a top shelf in temperate house, will retain their leafage admirably all the winter and bloom very early in the spring. Others kept in a higher temperature will bloom all through the winter. Once a plentiful stock of tubers are to be had the grower can employ them much as he desires, if only some be early forced, and others retarded as needed. The facility with which very fine strains may be obtained from seed enables gardeners to have Gloxinias in plenty with ease. I saw some very fine plants on the top shelf of a temperate house the other day at Titsey Park, which will at once begin to bloom abundantly.—A. D.

— **THE MIDLAND COUNTIES CARNATION SOCIETY.**—The schedule for the current year's Exhibition at the Botanical Society's Gardens at Edgbaston, Birmingham, will shortly be distributed, the date of the Show being August 5th. The schedule remains very much as last year, but with more prizes and two or three more classes added. Especial attention is being given to border varieties and to the encouragement of decoration work with cut blooms. The Directors of the Botanical Gardens have placed at the disposal of the Committee two silver and two bronze medals, which will be given to most successful exhibitors, and special prizes are given by friends for Sweet Peas and other flowers also. Mr. Robert Sydenham, Tenby Street, is the Chairman of the Committee.

— **NATIONAL PINK SOCIETY.—MIDLAND SECTION.**—The Wolverhampton Committee are making arrangements for the 1893 Exhibition of the Midland Section of the National Pink Society on July 11th, 12th, and 13th next, in connection with the great summer Show of the Wolverhampton Horticultural Society in the Public Park. Starting with a balance in hand, the schedule has been arranged, giving increased prizes in the class for twelve Pinks, dissimilar; and there is a class for the encouragement of border varieties, six bunches of any kinds, not more than twelve blooms in a bunch. There are also eight other classes for Pinks. Mr. A. R. Brown offers special prizes for his superb new Pink, Amy, sent out last autumn. Mr. Thurstans of Cardiff, a well-known raiser and grower, is the President for the year; and his son, also an energetic amateur, Mr. C. F. Thurstans, Pennfields, Wolverhampton, is Hon. Secretary.

— **BIRMINGHAM GARDENERS' ASSOCIATION.**—At the last meeting Mr. W. B. Latham, Curator of the Birmingham Botanical Gardens, read a paper on "Stove and Greenhouse Climbers," alluding to those of special interest, instancing amongst the former *Gloriosa superba*. This the essayist grows in loam, decayed manure, and sand, starting the tubers early, and laying the pots on their side in a warm house during the winter months. *Stigmatophyllum mibiatum*, *Thunbergia grandiflora*, *Solanum Wendlandi*, *Mucuna imbricata*, and *Aristolochia elegans* were named as more rarely seen, but beautiful stove climbers. Cultural instructions were freely given, and a good discussion followed.

— **FOURCROYA SELLOA.**—At the recent meeting of the Royal Botanic Society on Saturday one of the branches of the flowering stalk of *Fourcroya selloa* was shown from the Society's conservatory. This is a Mexican plant allied to the Aloes, and like them it flowers only once during its life. The plant, which has been in the conservatory for upwards of twenty years, late last autumn threw up a flower spike which in very short time grew to a height of 30 feet, and passing through the glass roof, rose for some feet into the open air. It could not, of course, resist the frosts and fogs of winter. The flower buds dropped unopened, when immediately from each node a number of young plants appeared. This mode of reproduction is found in only a few species of plants, and is especially valuable in relation to the cultivation of *Fourcroyas* as a source of commercial vegetable fibre.

— **THE KINGSTON AND SURBITON GARDENERS' ASSOCIATION.**—The adjourned meeting of the new mutual improvement association for gardeners was held at the Albany Hall on Thursday evening last, when Mr. T. Cushon presided over a good attendance. The rules prepared by the sub-Committee were accepted after discussion and ordered to be printed, the subscription of gardeners being fixed at 2s. 6d., and honorary members not less than 5s. per annum. The election of President and Vice-President was deferred. Mr. Dean was elected Hon. Treasurer, and Mr. Yeabsley, of Surbiton Hall Gardens, Hon. Secretary, the Committee being chosen as follows:—Messrs. Cushon, Watson, Tibble, Henbest, Benson, Martin, Hughes, Woods, Hawkes, Christmas, Marlow, and Peed. The next meeting will be held on March 2nd, at St. James's Hall.

— **A HUGE EUCHARIS.**—In one of the houses at The Briars, Reigate, the residence of Mrs. Barclay, there is one of the very finest clumps of *Eucharis amazonica* to be found almost anywhere. This giant cluster, for it can hardly be described as a plant, is in one of the largest of pots, for it is some 28 inches across and as deep. The growth in the pot is literally a mass of bulbs and leafage, the latter measuring 8 feet across. It is luxuriantly healthy and perfectly clean. The remarkable thing is that the plant, which some fifteen years ago originated from one bulb, has been in the present pot some nine or ten years, getting such occasional dressings of le fruitier, and guano, as it is possible to apply, and liquid manure. Since the beginning of December forty-nine splendid spikes or clusters of bloom have been taken from it, and about four such crops are furnished during the year. This grand clump reflects on Mr. Bailey, the gardener, the highest credit. It weighs some 4 cwt., and is seldom moved.—D.

— **CLOSE PINCHING AND PLANTING VINES.**—Far be it from me to cross pens with the skilled writers and practical men who have written on this interesting subject, yet I would fain have a few lines. Leaving out of the question the whole scientific value of each leaf, I emphatically protest against the advisability of wild Vine growth. For years I have conclusively proved that heavy crops of Grapes can be successfully produced by a continuous system of close stopping. The simple stopping of any Vine lateral is, as we all know, the stoppage to a certain extent of the flow of sap, but then if this operation is done at the correct time with thumb and finger it must be beneficial; fewer, yet finer, foliage is thus obtained without grossness. A few full-sized leaves are of far greater value than a crowd of smaller ones. The sub-laterals, pinched at one leaf, cause root development. By the end of the season I find ordinary laterals three leaves longer than at the first stopping. This of itself is against close Vine planting. Vines at 3 feet from rod to rod will answer well under this treatment, and Muscats 6 inches wider. Dealing with Vines 2 feet apart, though I crop fairly heavy, and have yearly fair results, these do not equal those of the wider-planted Vines. I treat every lateral as for fruiting all through the season. The result in healthiness of foliage is all that can be desired; and if fruit does not finish it is a question of a rather too heavy crop.—STEPHEN CASTLE, *Fordingbridge*.



— EXPERIENCE IN HEATING.—I see an error in my recent article on page 132. It reads, "Where a large number of houses in one range are all heated at about the same level from the mains, presuming the boiler is fixed in a central position, as it should be, the connections at the bottom of these vertical pipes are often as hot as is possible to bear the hand upon." I did not mean that the heat would not circulate up such vertical flow pipes in such an arrangement, for I should say that it certainly would. I ought to have stated "the connection at the bottom of these tall vertical pipes *here*, &c." That would have made the matter clear, but it was rather difficult to define. A boiler fixed centrally would heat far more efficiently, in my opinion, than if fixed at one end of the garden.—J. J. CRAVEN.

— THE WOLVERHAMPTON HORTICULTURAL SOCIETY. — The schedule of prizes for 1893 has just been issued, the Exhibition to be held in the extensive and well-kept public park at Wolverhampton on July 11th, 12th, and 13th. The schedule is a very liberal one, and large prizes are offered, especially for groups, stove and greenhouse plants, Roses, fruits, and vegetables. The handsome prizes for Roses will be certain to ensure a grand exhibition of this popular flower. Last year the Committee offered prizes for twelve distinct varieties of garden decoration Roses, to be shown in bunches, and two exhibits of great merit, from Messrs. Cooling & Sons, Bath, and Mr. Coombes, The Gardens, Himley, near Dudley, were greatly admired, and these prizes are repeated this year. A handsome gold medal is offered by a local gentleman for the best display of Violas and Pansies, with other medals as second and third prizes, and this is a new feature which will bring out some of the florists from Scotland. The schedule will no doubt secure a splendid show.

— HORTICULTURAL CLUB.—The annual dinner of the Horticultural Club took place on Tuesday evening, February 14th, at their rooms, Hotel Windsor, Victoria Street, Westminster, and there was a larger attendance than on any previous occasion. The chair was occupied by Sir J. T. D. Llewelyn, Bart., and amongst the members present were Messrs. John Lee, Arnold Moss, Philip Crowley, Herbert J. Veitch, J. S. Cousens, C. T. Druery, Geo. Bunyard, Harry Turner, William Bull, George Munro, James Webber, J. C. Wheeler, George Goucher, B. R. Davis, W. Soper, Rev. F. H. Gall, &c. The visitors present were Messrs. Owen Thomas, Her Majesty's gardener at Frogmore; Mr. John Eggleton, Clerk of the Fruiterers' Company; and Mr. George Ingram, Secretary of the Gardeners' Royal Benevolent Institution. After the usual loyal toasts the Chairman proposed the prosperity of the Horticultural Club, saying that when he came up from his far off residence in Wales, where he met with but little sympathy in his horticultural pursuits, he had no greater refreshment than these monthly meetings of the Club, where he was sure to meet with congenial spirits, and not only be profited by the discussions, but also enjoy the conversation of those who, like himself, were interested in horticulture in its many branches. The Secretary, in responding to the toast, stated that the Club was never in a more prosperous condition. A considerable sum was invested, and a number of new members during the past year was greater than in previous years. The Club was a social one, and in every respect had been helpful to horticulture. Various other toasts were given, and during the evening an excellent selection of vocal and instrumental music, kindly arranged by Mr. George Bunyard, added much to its pleasures. Mr. Geo. Bunyard proposed the health of the Chairman, which was drunk with enthusiasm, and with musical honours, and the party separated greatly pleased with the success of the evening.

— LIVERPOOL HORTICULTURAL ASSOCIATION.—On Saturday evening last there was an excellent attendance of members at the Museum, William Brown Street, to hear Mr. E. J. Baillie of Chester deliver an address on "Fruit and Flower Farming." Mr. T. White, Chairman of the Association, presided, and briefly introduced the lecturer. Mr. Baillie dealt with his subject in an instructive and humorous manner, both socially and morally. He touched on the land question, drew a striking comparison between steam and hand labour, how best to go about the question of fruit and flower farming with a view to employing the workers over the whole period of the year, the work of technical education, emphasising more especially the good that might be accomplished if the poorer classes in the towns were taught the great value of fruit as an article of diet, and the various purposes to which it might be put. He then dealt with the railway rates, and gave instances of the glaring injustice imposed

by the railway companies. In concluding, Mr. Baillie said that in his opinion until the railway companies met the producer in a right spirit, until the middleman was swept away, and agencies established where fruit of the highest quality could be bought and transferred throughout the country, and where the interests of the producer were thoroughly protected, he held out very poor hopes of those possessing small holdings ever being able to reap the perfect reward for their labours in the matter of fruit culture. Speaking of the love for flowers, he appealed in a most eloquent manner for the love of them to be by every means brought nearer to those poor toiling ones in our towns and cities who scarcely ever see a gleam of sunshine, and where green fields are a thing unknown. Mr. Ranger proposed a hearty vote of thanks to Mr. Baillie for his instructive address, and this was seconded by Mr. Glover. The remainder of the evening was devoted to the selection of varieties of fruit succeeding in the Liverpool district, Mr. R. Pennington promising to read a paper on the subject at a future meeting. A vote of thanks to the Chairman closed the meeting.—R. P. R.

### PANSIES IN WINTER.

IN "Seasonable Hints on Florists' Flowers" by "D., Deal," in the *Journal of Horticulture* of February 16th (page 130), we read, with regard to Pansies, "that these are always difficult to manage in this southern latitude, and I find them very likely to go off during the winter, when, as during the past two months, the frames have to be kept tolerably close; they then damp off, and I have lost a considerable proportion of my plants during the winter."

As a Pansy grower I read these remarks by a good old florist with some surprise, and I fear that if this is the practice of wintering plants in the south something has yet to be learnt. A fair portion of my life has been spent in the south, and I know the great difficulty in keeping Pansies alive in very hot summers, but I never knew any difficulty in wintering them. I was for four years with the late Mr. Charles Turner at Slough when the old show Pansies were in the full tide of popularity, and Pansies in pots were then exhibited as I have not seen them since. I had several years' experience of Pansy growing in Yorkshire, and whilst there was the first to take the Fancy Pansy in hand; and I am still a grower here, in a smokey suburb of Birmingham, and my plants do not get any sunshine whatever upon them from November until March. The plants, probably 2000, are as healthy as young Cabbage plants in spring, and I will briefly describe the treatment accorded them.

I use frames for wintering, placing about 6 inches underneath the soil a layer of soot to prevent worms getting through, as they are a deadly enemy to Pansy cuttings by drawing them into the soil. The soil is made up firmly to within about 6 inches of the glass back and front, the cuttings inserted at any time in the autumn, not shut up close for more than a day or two if bright, and slightly shaded, but air always afforded afterwards, and kept watered if dry warm weather prevails. In September and onwards I put them in freely without having the lights on at all. The young plants have had an abundance of exposure, merely keeping the lights on in very severe weather, or when we have continuous rain, but always with air freely admitted, especially in wet weather. We are now having mild but almost continuously wet weather, yet the lights are constantly off, and will not be put on again until we blistering east winds or very severe frost.

The Pansy is essentially a hardy plant, and nothing ruins it quicker than coddling it. Of course it is essential that healthy strong cuttings or young healthy offsets should be secured. I do not recommend keeping the plants in pots in the winter. They are much safer planted out as close together as may be required, and kept hardy; and when transplanting or potting the plants can be lifted with good balls of earth. I cannot too strongly recommend early planting out, in March if possible, and place the plant a little deeper in the earth than it was in the frame.

Here, even in our wretched climate compared with that of the south, plants frequently stand putting well in the open, and one of my Pansy growing friends last year had a batch of his finest varieties out of doors without any protection—and it was a terrible winter—and they did far better than plants in frames, which had been kept too close. In the south coast district there should be no difficulty whatever in wintering Pansies without losses if planted out, but I know from experience how difficult it is to keep Pansies and Violas in good health, and sometimes alive in very hot weather. I may add that the same treatment does for the bedding Violas, and purchasers should insist on plants being well rooted with earth about them, and each packed separately in damp moss.—W. DEAN.

### BEGONIA GLOIRE DE SCEAUX.

FOR the embellishment of well heated conservatories and other glass structures during the dull period of the year few plants can surpass some of the winter-flowering Begonias. When properly managed most of the old varieties of these will give a profusion of bloom all through



the winter, but far superior to many is the beautiful Gloire de Sceaux (fig. 28). This Begonia is of French origin, and is said to have been raised by Messrs. Thibaut & Keteleer of Sceaux. For decorative pur-

time, not only recommended a silver Banksian medal for the exhibit as a whole, but adjudged a first-class certificate.

This Begonia is quite distinct from others in cultivation, and well



FIG. 28.—BEGONIA GLOIRE DE SCEAUX.

poses it is most valuable. This fact was clearly demonstrated by the splendidly grown plants exhibited by Mr. Jennings of Ascott, Leighton Buzzard, at the Drill Hall, on January 17th. On that occasion the Floral Committee of the Royal Horticultural Society, as reported at the

gown plants of it are very effective. It is upright, but compact and vigorous in growth, producing ample dark bronze-green leaves. The flowers are pink in colour, and are borne in large clusters well above the foliage. It is a plant that should be seen in every garden.





## AN AMERICAN NOTION.

MESSRS. PITCHER & MANDA in offering Chrysanthemum seed (in their English catalogue, Hextable, Swanley) saved in their nurseries, New Jersey, U.S.A., also offer a first prize of £20 for the three best varieties raised by purchasers of seed for the three best varieties to be exhibited at the N.C.S. Show at the Westminster Aquarium in November with £10 and £5 for the second and third best varieties respectively, the prizewinning plants to become the property of the donors of the prizes.

## DWARF PLANTS.

It is pleasing to see the great advance made in raising varieties that produce large blooms on dwarf plants. Last year we had Vivian Morel not more than 4 feet high, and carrying fine blooms. For the information of those who wish to add dwarf-growing varieties to their collection I append a few names as they occur to my memory:—Mrs. Falconer Jameson, orange bronze; Mohawk, chestnut red and tipped gold while young; Mons. Bernard, purple; Mrs. E. D. Adams, creamy white and tinged pink; Mrs. F. A. Spaulding, ochre yellow shaded bronze (I cannot see any difference between this and J. Stanborough Dibbens); Comte F. Lurani, white ground, heavily veined and mottled rose; W. H. Lincoln, deep yellow, a decided improvement upon grandiflora; and Marquis de Paris, white. The above are comparatively new varieties belonging to the Japanese section.

Two years since Mr. Molyneux exhibited blooms of several varieties of the "Queen" family at the Kingston Show, and these were quite as fine as any in the competition classes. He also showed parts of the main stems which had produced the blooms, which were of less size than the small finger of a man's hand; the plants were not more than 4 feet in height. I noticed too that the wood from which the blooms were cut was very hard. It seems to me that there is much yet to learn how to secure high-class blooms of naturally tall-growing varieties from plants under 4 feet high, and still obtain them from "crown" buds.

## SEPTEMBER VARIETIES OUT OF DOORS.

What a pity these are not grown more extensively for flowering in the borders during the autumn. Apart from their usefulness in a cut state they brighten up the herbaceous borders at a time when the regular occupants are waning. Madame Desgrange is as good as any, the white blooms being always admired. Mrs. Hawkins, deep yellow; Gustave Wermig, pale yellow; and Mrs. Burrell, sulphur yellow, are also well suited for the purpose. The new Lady Fitzwygram ought to prove useful where a whole bed of Chrysanthemums is required. The habit of growth, low and spreading, should render it more desirable for beds than borders. Its pure white freely produced blossoms are of good form.

## SINGLE-FLOWERED VARIETIES.

At last this section is receiving increased attention. Not only are the single varieties much more showy when arranged in clusters than the ordinary incurved section, but they make a welcome break in the long rows of the stiff formal blooms at exhibitions. The colours are extremely diversified, and varieties like Oceana and Jane are always admired. It is surprising to what a huge size some varieties will grow when the plants are cultivated with the express object of producing the largest blooms. I have seen the variety Admiral Sir S. Symons grown in this way, giving single blooms measuring 8 inches in diameter. Such results, however, are not desirable.

The true way of showing off this section is by setting up in bunches long spikes with all their blooms developed, disbudding being rigorously dispensed with. Another advantage which these single flowered sorts possess over any other is the easy way they can be cultivated really well in exceptionally small pots, thus rendering them so much more useful for the decoration of the dwelling house.—SADOC.

## PROFITABLE CHRYSANTHEMUMS.

I HAVE been much interested by the remarks of your correspondents on this subject. The varieties described by "Enfieldian" (page 117) are I know most suitable, and find favour with the majority of the growers. I fully concur with his judgment anent the superiority of Madame Louise Leroy over the well-known Elaine; but I would here point out that "circumstances alter cases." Surely "Enfieldian" knows why Elaine secured the highest returns last season. At least I should have thought that every grower in the Lea Valley would have an idea as to the true facts of the case. It will be well within the memory of your readers that we had a severe frost on September 18th, which caused dire havoc amongst the early plants. If I say 100,000 plants were crippled in the Lea Valley alone I should be well within the mark, and at the same time it will serve to show this portion of the supplies were cut off. As a natural consequence prices ruled high, and it was no uncommon thing to pay 9s. and 12s. per dozen bunches for Madame Desgrange—bunches that could be obtained the year previously for 3s. per dozen.

Elaine followed the Desgrange family while the prices were still high, and of course realised a good figure. The moment Madame Louise Leroy, Mdlle. Lacroix, Florence Percy, and Fair Maid of Guernsey came on the scene, however, down came the prices, so they could be obtained at 4s. and 5s. per dozen bunches. So the prices obtained last year for Elaine must be considered exceptional.

Fashion has much to do with regulating the prices of different colours. For instance, last season yellow was almost as much in demand as white, and prices were high accordingly. I am not surprised to hear that Mons. Bernard failed to establish a position on the market, for few would wear such a colour. This season, however, sees a change, and the very colours which were at a discount will now be appreciated. Such is the fashion that rules the market colours and prices. I should like to ask if any of your readers grow Mrs. Carey (yellow)? Nearly all market growers cultivate the white form, but as far as I can ascertain the yellow form comes from the Channel Islands only. All through January there was an enormous supply from Guernsey. A friend of mine has now established a pink form of Mrs. Carey which I believe will prove useful. I am trying a few plants this season, so I shall be able to report thereon.

Louis Boehmer will become a marketable variety, for, when grown on market principles, its character is considerably altered. The blooms are reflexed instead of incurved, the colour seen in large blooms is changed for a much more delicate shade, and its hairy character less prominent. The variety is so vigorous, and has the facility of developing every bud, after the style of La Triomphante, that it cannot fail to become a prime favourite. Mr. Divers some time ago called attention to its adaptability for growing in small pots. I can also strongly recommend it for this purpose. I rooted about two hundred cuttings in boxes last June and grew them in 6-inch pots. They were pinched once, so that good bushy plants were formed. I am so satisfied with the result obtained that the variety will be grown on a larger scale in future.

I quite agree with "Enfieldian" in his remarks anent the Val d'Andorre type for cut flower purposes. As pot plants they are simply invaluable, but all such varieties that have very little stem above the foliage are practically useless for market purposes, and they are much too stiff.—JAS. B. RIDING, Chingford.

## NATIONAL CHRYSANTHEMUM SOCIETY—ANNUAL MEETING.

THE annual meeting of the members of this Society was held on Monday evening last at Anderton's Hotel, Mr. R. Ballantine presiding. The whole of the officers were present, and there was an exceptionally large attendance of members, which would probably have been much greater but for the rain which fell heavily for an hour before the time appointed for the meeting.

The minutes of the annual meeting held on March 15th last year were read, and the Chairman observed that there was only one item that called for explanation upon them. Mr. Leopold de Rothschild on that occasion had been chosen the President of the Society, but being unable to accept it the Committee had applied to Sir Edwin Saunders, and he was sure they could not have chosen a better man. Sir Edwin had attended several of the Society's meetings and evinced much interest in the proceedings of the Society, and he felt sure the meeting would approve of the selection.

The Secretary then submitted the annual report and financial statement for the past year, by which it appears that it has been one of the most prosperous the Society has had. Numbers have steadily increased; a large accession of affiliated societies has taken place, there being now 620 members and 100 societies at home and abroad in affiliation, showing an increase of fourteen during the year. The November show was highly satisfactory, the competition for the Holmes' memorial cups being very keen. Mr. Earland's frozen blooms from New Zealand had drawn considerable public attention to the Society, and in order to return the compliment it had been decided to send out some English prize-winning flowers to the colony for exhibition there. In the ensuing year there are to be three shows held by the N.C.S.—viz., one in October, November, and December, the ordinary September show being taken over by the Royal Aquarium Company. Reference is also made to the Conference on show boards, and the reason that led the Committee to make no alteration for the present. The Society's receipts for the year amount to £944 14s. 3d., of which £209 15s. 7d. was members' subscriptions, £163 13s. donations and special prizes, £291 16s. amount contributed by the Aquarium authorities, and £49 7s. affiliated societies' fees. The expenditure has been heavy, and in spite of previous anticipations has swallowed up the entire revenue excepting a few shillings. The chief items on this side are prize money at the September, October, and November Shows, with some arrears of 1891, £429 16s.

The Secretary explained the reason why the expenditure had been somewhat heavy, and pointed out that the members' subscriptions were a small amount when compared with the outgoings. He hoped every member would see the importance of introducing new members, as the loss by resignation and removal amounted to about seventy or eighty members per annum.

The Chairman moved that the report and financial statement be received and adopted. The work of the Society had met with the approval of the gardening press, and with respect to the correspondence in one of the gardening papers he was able to say that an accession of members was distinctly traceable to that cause.

Mr. E. C. Jukes thought the report was really more favourable than it appeared to be. Upwards of £40 was due by affiliated societies, and



had that sum been paid the National Chrysanthemum Society would that night have been in a good position. It was not creditable for members to be in arrear, still less, he thought, was it creditable for affiliated societies not to pay their dues. Considering what a bad year 1892 had been for all in trade, he thought the balance-sheet showed the Society was in a flourishing condition.

The Secretary explained that arrears amounting to £11 19s. 6d. had come in during the past week, but that there were still sixty-eight defaulting members. He then read the following list of special prizes for the forthcoming shows—Messrs. Pitcher & Manda, £35; Messrs. Sutton & Sons, £20; Mr. Owen, £12; Mr. H. J. Jones, £9; Mr. Godfrey, £7 7s.; Messrs. E. D. Shuttleworth & Co., £5; Mr. E. C. Jukes, £5.

The election of officers next occupied the attention of the meeting, with the following result: President, Sir Edwin Saunders; Treasurer, J. R. Starling, Esq.; Chairman of Committee, R. Ballantine, Esq.; Vice-Chairman, E. C. Jukes, Esq.; Secretary, Mr. Rd. Dean; Foreign Secretary, Mr. C. Harman Payne. The Dowager Duchess of Sutherland and Lady Saunders were added to the list of Patronesses, and to the list of Vice-Presidents and Patrons the names of Lord de L'Isle and Dudley, Sir Trevor Lawrence, and others.

At this stage of the proceedings, and after the officials had thanked the meeting for their re-election, the Secretary read a telegram from Mr. Goodacre nominating Mr. Blair, Mr. Mease, Mr. Woodgate, and Mr. Lambert as members of the General Committee. Mr. C. E. Pearson, who had become a member of the Society, wished also to be nominated, but inquiry was immediately raised as to whether these gentlemen would be able and willing to attend to the work if elected. Mr. Mease not being a member his name was withdrawn; and after the nominations were all given in it was found that there were twenty-two candidates for the twelve vacant places on the General Committee. The successful ones were Messrs. H. J. Jones, J. H. Laing, Boyce, C. Gibson, G. Stevens, Geo. Gordon, E. Beckett, D. B. Crane, Wright, B. Wynne, Mardlin, and Davey, the whole of the retiring members who, being eligible for re-election, being again elected. Mr. Arthur Veitch and Mr. G. J. Ingram were tellers.

Mr. W. H. Fowler proposed a vote of thanks to Sir Edwin and Lady Saunders for the interest they had shown in the Society during the past year, and the Secretary moved one to the Catalogue Committee.

The rules of the Society next came on for discussion, and it was evident that Mr. Addison's motion for a rule to enable members to be expelled for improper conduct excited some curiosity. In opening the discussion, Mr. Addison said it would require very little argument on his part to persuade the meeting that it was necessary some such rule as he proposed should be incorporated in the constitution of the Society, it was nothing unusual, and was one that might be found in all societies and clubs in and near London, and he had framed it from several of such societies' rules. He would read it:—"That any member who shall refuse to conform to the rules and regulations of the Society, or shall be guilty of irregularity or of dishonourable or disorderly conduct, or of conduct likely to bring discredit upon the Society, shall be subject to expulsion by a vote of two-thirds of the members present at any general meeting." In support of the proposal he would take only a few points. There were nearly 700 members, and as the Society stood, if a man were elected a member and also elected on one of the committees he could remain in that position for three years, no matter what he chose to do. Mr. Addison, in support of his contention, quoted a case of a member who had sold tickets and not accounted for them, against whom they were powerless, and the same rule would he thought legalise what the Society had hitherto done in removing the names of members whose subscriptions remained unpaid at the end of the year. Mr. W. Wells seconded the motion, remarking upon his own case, which the Chairman prudently ruled out of order.

Mr. E. C. Jukes strongly opposed the motion, although he gave the mover every credit for bringing it forward in the interest of the Society. The case of this Society was not analogous to that of cricket clubs and other similar organisations. Where such a rule was in force the persons joining knew of it, and they accepted the condition. Irregular conduct was difficult to define, and no two men agreed in their definition of it. In the City he saw every day men doing what he personally would not like to do, yet these men were perfectly satisfied. He was quite as much opposed to improper conduct as anyone present, but it would be dangerous to leave such a definition in the hands of a public meeting.

Mr. Fowler could not see his way to support the motion as it stood. If members could be struck off the roll for non-payment of their subscriptions, he thought something might be done. Mr. Beavan supported Mr. Fowler, and thought the proposition would lead to trouble. Other speakers against the proposal were Mr. Hicks, Mr. Rd. Dean, Mr. W. Piercy, Mr. Newell, Mr. Geo. Gordon, and Mr. Moorman, the last of whom hoped the mover would see his way clear to withdraw it altogether.

Mr. Addison, after the opposition, said that in withdrawing his motion he hoped the members would give him credit for honestly believing he was acting in the interests of the Society by adopting the course he had. He thought that Mr. Fowler's observations if embodied in a proposition to follow would satisfy him equally well as his own motion.

Mr. W. H. Fowler then moved a resolution to the effect that members who had not paid their dues by a given date should be struck off the register, and this was carried.

New members were elected, and the business of the evening brought to a close at an unusually late hour.

## CELERY AND ITS CULTIVATION.

[Read by MR. R. FILKINS, at the Chislehurst Gardeners' Society.]

MOST gardeners desire to have a good supply of that excellent winter vegetable Celery, and yet few obtain a really good crop. The question naturally arises, Why is it? Now, from my own observations there are three primary evils that militate against a good sound crop—bolting or running to seed, soft and pithy growth, and the attacks of the Celery fly or maggot. I have no hesitation in saying that the gardener is in most cases to blame, because he does not always study the requirements of the plant.

In Nicholson's "Dictionary of Gardening," the Celery is described "as a native British plant of biennial growth found in a wild state inhabiting marshy places." It has a number of fibrous roots and very succulent stems, and requires a large amount of moisture to keep up the supply of necessary sap. It is also essential that the plant should have as many perfect leaves as can be exposed to the sunlight. The necessity of this will be apparent if we consider what the leaves of a plant have to do; it is only through the foliage that plants obtain the carbon that forms the greater part of their dry material. This carbon is taken up by plants as carbon dioxide from the air; in the chlorophyll cells it is decomposed and separated, the oxygen is given off into the air, and the carbon retained. Combined with hydrogen and oxygen it forms starch for building up the tissues of the plants, but this can only be done under the action of sunlight and heat.

I have said that the gardener was to blame for the three primary evils attendant on Celery growing, and I will endeavour to prove it. In the first place, he sows his seed too soon and too thickly. In some gardens space is limited, and Celery has to be planted out after early Peas and Beans come off the ground, which does not generally take place till the middle of July, and if the seed is sown at the end of February or beginning of March the plants are either kept too long in the seed pan, or if they have proper attention in the way of pricking out the plants will be too large to bear moving into their permanent position without giving them a check. Another disadvantage of too early sowing is that the crop is at its best before it is really wanted. Celery is not usually required in very great quantity before the end of October, and to have this properly blanched it should be ready for earthing up at the beginning of September. This, however, would not be in such good condition to stand the frosts of winter as later plants, coming to maturity at the middle of October.

In the manner of planting also the grower is sometimes greatly to blame, the usual practice being to dig out a trench a foot deep, putting the good top soil between the trenches. He then digs in manure, and in doing so brings up soil which is unsuitable. Then the plants are put out, and they grow very freely for a time, owing to the manure; but as soon as this is exhausted the roots push out in search of food, but instead they are walled in as it were by ungenial soil, owing to the depth at which they are planted. It is often, too, at this stage of their growth that the plants are most neglected in the matter of watering. The gardener forgets that it is a ditch plant, and although he has provided the ditch he neglects to give the water.

In the foregoing remarks I have endeavoured to show how the gardener is to blame for pithy and bolted Celery by early and thick sowing, and by giving it too many checks during its growth. One of the greatest checks is not supplying sufficient water after the plants are put out, which to a very great degree predisposes them to the attacks of the Celery fly or maggot, as owing to an insufficiency of moisture the tissues of the plants are not properly built up, the cuticle of the leaves is much softer, rendering them less able to withstand the attacks of enemies. Anyone can prove this by leaving a few plants in the bed they are pricked-out in, and withholding water. As soon as they have exhausted the goodness of the soil the maggot will make its appearance, simply because the plants are starved, and in a debilitated condition. But Celery that is kept continually and steadily growing from the time the seed is sown till cold puts a stop to growth is very rarely attacked by maggot, and then only on leaves that by being shaded are not so robust. "Yes," someone may say, "but that requires much attention." That Celery growing does require attention I admit, but sound cultivation is all that it requires. If you are able to devote a part of the garden to Celery then give it careful preparation; trench the ground as deep as the soil will admit, incorporate with it some manure, the ashes from a rubbish fire, the refuse from the potting bench, leaf mould, are all good; but the soil from an earth closet I consider the best, as it contains a large amount of nitrogen and phosphates. Whatever is used well mix it with the soil, frequently forking it over so that it is well pulverised and exposed to the action of the weather.

If an early supply is wanted sow the seed thinly early in March, and place it in a temperature of from 60° to 65°. When the seedlings are up place the pan or box as near to the glass as you can, so that they can get plenty of light.

In from five to six weeks the seedlings will be ready to prick off, which should be done into deep boxes filled only so full of soil that a square of glass placed on the box will not touch the plants. They should be well watered so as to moisten all the soil, the glass put on, and if necessary a piece of paper to shade them. The reason for putting the glass on is to prevent evaporation, and it does away with the necessity of frequent waterings. After three or four days the glass may be tilted up so as to give a little air, and a slight dewing with the syringe should be given. Gradually harden them, and by the middle of May they may be transferred to the trenches. These should not be more than 4 or 5 inches deep, and water the plants well. I do not believe in driblets,



rather give one thorough good soaking that will last a week than five or six surface dribblings that only coax the roots to the surface to be shrivelled by the sun. After watering, as soon as the top is moderately dry, run the hoe through, so that the surface dries, as this layer of dry soil prevents evaporation, and also prevents many valuable gases leaving the soil.

About the middle of July a little soil should be chopped from the sides of the trench to cover any roots that may be pushing to the top. A dressing of soot should also be given, as this prevents slugs eating the plants, and it also improves the colour, and gives a dark green appearance to the foliage. By the end of August the plants can be earthed up. Be careful to keep the soil out of the hearts. A week before earthing up go over the plants, and all the small leaves and any suckers there may be taken off, as this gives time for the fractures to dry and heal. Before earthing up I generally tie each plant with a piece of matting to keep the soil out of the heart, taking it off after earthing; in six weeks the Celery may be used.

For the main crop the last week in April is soon enough to sow the seed. If a large number of plants is wanted make up a very slight hot-bed, on which place an old frame in which to sow the seed. Sow the seed very thinly, and when the seedlings are up ventilate freely in all favourable weather. When the plants are large enough prick them out on a bed of prepared soil. This bed should be in a sunny spot, and ought to be made up of two parts loam, one part decayed manure, one part leaf soil with plenty of road grit, thoroughly mixing it. Tread it moderately firm, water the plants and shade for a day or two, keep them well supplied with water when established, and they will lift from this bed with good balls of soil attached to the roots.

The best position for the plants is a piece of ground from which a crop of Peas or Beans has been taken. The only preparation the ground will require is to draw wide drills from 3 to 4 inches deep at 4 feet apart in which to place the plants, and keep them supplied with water till October. Frequently stir the soil between the rows, sprinkling soot or nitrate of soda over the ground before hoeing. Do not earth the plants up till severe frost compels it for protection. After earthing, if it is very frosty, protect with some dry litter or bracken, and if some boards nailed together can be placed over this it will be made more secure.

Perhaps it may not be generally known why it is that Celery always does so well after Peas or Beans, especially if the ground has been trenched. Science has found out that soil that has not been broken up and exposed to the air contains more free acids—ferric and nitric acid, which are not taken up by plants until they have been converted into nitrogen. The roots of all leguminous plants have the peculiarity of doing this, leaving the ground richer in nitrogen than when they were sown; this the Celery is able to appropriate. Another advantage of Celery following early Peas is that they get an open situation, so that they get all the advantage of light and air. Being in shallow trenches the roots are influenced more by the sun and air. The ground also being firm the growth is more solid and better able to stand the frost of winter.

I have grown Celery for a late supply upon ground from which crops of Peas and Beans have been taken without any further preparation beyond hoeing to loosen the surface for planting. The ground was bastard trenched and plenty of manure put in for the Peas and Beans. The Peas were sown 10 feet apart with three rows of Broad Beans  $2\frac{1}{2}$  feet asunder. After these were removed rows of Celery were put out between where the former rows had been at a distance of 5 feet apart. The plants were kept well watered, and after they were well established supplies of house sewage were given. No attempt was made to earth up till nearly the end of October, when it was done at one operation. Out of 300 plants not one bolted or was pithy, and with the exception of a leaf here and there practically free from maggot. With the precaution of covering with dry litter on the approach of severe frost I was able to keep up a supply till the end of March.

For an early supply I used to set apart a plot of ground, the only part of the garden from which I could get a good crop of Carrots. One half was occupied by Carrots and the other half Celery. After the Carrots were taken off the ground was manured with soil from an earth closet, stirring the ground deeply, and left rough all the winter. About the middle of May the ground was chopped over, and wide drills, 4 to 5 inches deep, were drawn out 4 feet apart. After the Celery was planted other drills were drawn between and Lettuce seed sown. The Lettuce plants were used before the Celery required all the soil, the Celery coming off in time for the ground to be prepared for Carrots. No manure was added except some soot and wood ashes. Before the soil was chopped down, and being near the sewage tank, the Celery was always given a good supply, but I was careful to have the ground moist before giving the liquid, as I once spoilt a row by giving strong sewage when dry.

I was first induced to think over firm ground for Celery when I went into a nursery in Lincolnshire, where vegetable growing for market was largely practised. A piece of ground was heavily manured and ploughed. In the spring it was well pulverised and sown with Radishes; as soon as they were large enough they were sent to market. When the ground was cleared two furrows were ploughed out where it was intended a row of Celery was to go; the bottom was then dug over, and the Celery planted. The plants had been prepared by making up a large heap of manure in a sheltered corner, and covering it with soil. At the end of March the seed was sown very thinly, and a thick covering of dry Asparagus tops placed on the bed. This was taken off as soon as it was

seen the plants were coming through the soil. When the seedlings were large enough they were pricked out on a piece of prepared ground and ultimately planted out, and no one could wish for better Celery.

Since that time, both from my own observation and from what I have read of the experience of others, I am still of opinion that firm ground, provided it is fertile, is the best. The growth may not be so rapid as when it is grown in a trench of manure, but it is more solid. Another advantage of firm ground is that it does not dry so quickly as loose, light ground, and does not require so much labour in applying water.

I have said nothing about Celery for exhibition. Perhaps at some future time I may take the pleasure of saying something, but I suppose a paper is not complete without saying something about varieties. Of white varieties for some years I grew nothing but Sandringham, but whether from want of care in selection it appears to me to have deteriorated. Carter's Solid Ivory White is good, but it takes a long time to blanch properly. Barr's Covent Garden White is the one I prefer for earliest; it is quite as good a grower as Carter's, but the stems are very much whiter, and the heart comes well up and is quickly blanched. Barr's Champion White I have found good for a main crop. Of red varieties Major Clarke's I have always found reliable. Barr's Covent Garden Dwarf Red for putting out after Peas, is also good. Standard Bearer is useful, but I have not found it so hardy as Major Clarke's or Leicester Red.

In this paper I have given my convictions from practice and observations, but to show that I am not alone in my theory as to firm soil for Celery I may mention that a writer in the *Journal of Horticulture* for August 18th, page 145, gave it as his opinion that Celery could be sown where it was to remain. That Celery will bear planting out into trenches very small I have seen several instances, but in all cases they have had great attention to watering and shading.

In conclusion, let me say that if quick growth is wanted nothing is better than a slight sprinkling of nitrate of soda. Clay's fertiliser is also a good stimulant, being careful to water it well in.

#### PRIMULAS AT FOREST HILL.

A CALL at Messrs. Carter & Co.'s nursery in Houston Road, Perry Hill, which is within comfortable walking distance of Forest Hill station on the London, Brighton, and South Coast Railway, would be well rewarded, for their large collection of Primulas is, or was a week ago, in remarkably fine condition. Passers-by possibly survey with mixed feelings the large house of Cactaceous plants which is seen from the roadway according as their tastes may incline them to regard favourably or otherwise these curiosities of the vegetable kingdom, but there can hardly be two opinions among those who pass in and inspect the Primula houses, brilliant with the collective beauty of some thousands of plants. Persons nourishing strong diversities of taste would surely find common ground for admiration there. Seldom in the many years during which the Holborn firm have been engaged on the popular winter florists' flower have they had so fine a display as this season, and the interest of the collection is greatly strengthened by the inclusion of several novelties of exceptional beauty and promise. It is true that fertilisation is in full swing, and this means that many flowers come off daily; but the quantity is so enormous that now, and for some little time, there will be a rich display of blooms to delight the visitor.

One of the first impressions to follow the preliminary feeling of admiration will be that of speculation as to the serious object of the magnificent show provided. It cannot be for ornament alone, and as for seed, there would seem to be plants enough to provide sufficient for the whole country. It is not easy to appreciate the fact that every seed which can be raised is wanted, and for retail orders alone, not only, however, is such the case, but although many pounds are raised every season the collection has to be annually enlarged in order to keep pace with the growing demand. This might well "give pause." To retail Parsnips by the pound is nothing, but when it is borne in mind what the average size of a packet of Primula seed is, and the immense number into which a pound of seed is split up, it is difficult to realise that that quantity goes but a little way in supplying customers. The fact is Messrs. Carter and Co. not only have a stupendous general connection in seeds, but a special additional one in Primulas, to which they have given more than ordinary attention and prominence.

Primula growers are now a numerous body, and will doubtless be more interested in remarks on the individual varieties than in further generalities. The time has not long passed since cultivators were satisfied to grow the red and white varieties alone, or even to rely upon a packet of mixed seed for their stock of plants; but named varieties have been introduced so far in advance of the old rubra and alba that the former order has changed, and Primula lovers extend their collections so as to embrace as many as possible of the improved forms. The Holborn specialists have been active in catering for them, and the excellence of their strains is now abundantly manifest.

Reference may first of all be made to the singles, which embrace a considerable diversity of colours. The first to be noted in the first house entered was the original Holborn Blue, which excited so much comment when first introduced. It is now well known and widely appreciated; but it has a neighbour which many visitors will consider eclipses it, and that is the variety known as Holborn Porcelain. This is a really splendid Primula. In quality of flower there are few to equal it. The blooms are 2 and  $2\frac{1}{4}$  inches across, beautifully fimbriated and of great substance. They are altogether larger and finer than the old variety, and the colour



is richer ; there is more than a suspicion of purple in it. Though the plants were young, they were carrying good trusses. Altogether the variety may be considered one of the best yet raised. Holborn Magenta is very fine in its colour. It is rich and striking, besides carrying a good truss. Holborn Vermilion is somewhat smaller in bloom, but has dense clusters of flowers. Its hue is a particularly brilliant and telling one. Holborn Queen is wonderfully pleasing. It is a white, with a very faint blush tint, having a good even truss and medium-sized blooms. Holborn Rose is not so striking as its more brilliant sisters, but its colour—rosy pink—is eminently pleasing, and the flower is large. It is a Fern-leaved variety. In Holborn Venus we have a striped and spotted flower, the groundwork being white and the colouring rosy magenta. There are two Holborn Elaines, one Palm and the other Fern-leaved. Both are pure white and both beautiful, but the latter is usually the more admired. It is a beautiful variety, the blooms being large, substantial, and well shown up by the brown stems. In the estimation of many persons this ranks as one of the best in the whole collection. Holborn Salmon is a fine deep salmon with an excellent truss. It is a late bloomer, not yet at its best. Holborn Carmine is particularly rich in colour, and its fine trusses are borne well above the foliage.

The novelties include a really remarkable variety named Holborn Blush. In size and substance of bloom it is one of the finest Primulas ever raised. The petals are quite leathery in texture. The variety is the result of a cross between the blue Holborn Porcelain and the white Holborn Queen, the former being the pollen parent. A happier union was never effected. The new form has the large proportions and beautiful fringing of Porcelain, with even increased size, many of the flowers measuring 3 inches across, and it has the light foliage of Queen. The colour, as will be gathered from the name, is distinct from either parent. The stock of plants is now small. Should the variety prove capable of developing a good truss without losing materially in quality of bloom, it will soon find its way to the position of head of the collection. Another meritorious novelty is the Palm-leaved Holborn Rose, which is the result of a cross between Porcelain and Magenta. It has the shape and substance of the former, but a larger flower than either, and the colour is a bright rose. While not quite equal to Blush, it is a not unworthy companion to it. Holborn Ruby is a curiosity. It has large substantial ruby red flowers, dotted with patches of white, as though they had been splashed with whitewash.

There are half a dozen double and semi-double flowers well worthy of mention. The first is Princess of Wales, white dotted and flaked with rosy carmine. It might be described as a double form of Venus. Lilac Queen has full blooms and a fine truss, the colour being deep lilac mauve. Blue Rosette has double and semi-double flowers of a clear lavender hue. Snowflake is a remarkably free bloomer. The flowers are white, but with a very faint tinge of pink. Prince of Wales, rich rosy salmon, is free in blooming, and very bright in colour, altogether a charming variety. Carmine Empress produces abundance of medium-sized blooms, and in colour it is one of the richest of all, showing up prominently amongst all the others.

#### APPLES DR. HARVEY AND WORMSLEY PIPPIN.

"A. D." (page 130) invites me to send samples of six fruits of each of these Apples to the next Committee meeting of the Royal Horticultural Society at the Drill Hall. I am sorry I cannot oblige him this season, as the demands of the kitchen have cleared away all the fruit of these varieties. "A. D." has, however, had ample opportunity, and doubtless will have again, of comparing the Apples in question. The Journal of the Royal Horticultural Society, vol. x., 1888, on British Apples, states that the Apples named Dr. Harvey, Wormsley Pippin, and Waltham Abbey Seedling were exhibited both in 1883 and 1888, and the Fruit Committee considered Golden Noble synonymous with Waltham Abbey Seedling. Although the members of the Committee act to the best of their knowledge for the time being, they are liable to be proved wrong, even by "A. D." himself, as he remarks that Golden Noble has long since been proved to be distinct from Waltham Abbey Seedling.

I thoroughly agree with him that Golden Noble is a very distinct variety, and worthy of extensive cultivation, either as a standard or on the Paradise stock for bush culture. At some future time, if required, I may perhaps send samples with wood and leaves attached to the Editor of the *Journal of Horticulture*. The description given in the list of British Apples, vol. x., 1888, of the three differently named Apples is almost identical as regards shape, colour, season, and quality. Whatever one may prove, there is not the least doubt that the Apples in question will continue to be grown under their local names in certain districts. In the East of England—Norfolk—Dr. Harvey is extensively grown. The name is commemorative of a learned doctor who lived in South Norfolk and grew the Apple extensively. In the West of England it will always be called the Wormsley Apple.—JOHN CHINNERY.

[There is not the least necessity to send samples of Golden Noble and Waltham Abbey Seedling here for showing the distinctness of the two varieties. The essential points of difference are clearly pointed out in the "Fruit Manual," and Dr. Hogg says, referring to the last named variety, "I know of no Apple which bears fruit so large and has foliage so small." We also know it would be impossible that the present Fruit Committee of the R.H.S. would give anything like a unanimous vote, declaring Golden Noble and Waltham Abbey Seedling synonymous, and the members would be much more likely to laugh the proposition off the table.]

#### GILIA BRANDEGEL.

THE annual Gilias are better known and more extensively grown than the biennial and perennial forms, though some of both of the latter are worthy of a place in every garden. *G. Brandegei*, the perennial species represented in the engraving (fig. 29) forms tufts of small peculiar and pretty leaves, alternate on the leafstalk ; the flower stems are erect, from 6 to 8 inches in height, giving a succession of bright primrose-yellow flowers all through the summer and autumn. It is perfectly hardy, and seems to flourish best in a damp shady situation ; if on rockery the natural drainage will be



FIG. 29.—GILIA BRANDEGEL.

found sufficient. Planted out in a position where it can be treated liberally it attains a large size for a Gilia, forming in one year a clump from 1 to 2 feet in diameter. The young growths or side shoots may be struck readily under a hand-glass in August and September. It is a native of the Rocky Mountains of South Colorado.

#### ROYAL METEOROLOGICAL SOCIETY.

THE monthly meeting of this Society was held on Wednesday evening, the 15th instant, at the Institution of Civil Engineers, 25, Great George Street, Westminster ; Dr. C. Theodore Williams, President, in the chair. Dr. J. H. Davies, Mr. G. F. Deacon, M.Inst.C.E., Mr. A. S. Helps, and Mr. R. H. Jeffrey, B.A., were elected Fellows of the Society. The following papers were read :—

1. "Report on the Phenological Observations for 1892," by Mr. E. Mawley, F.R.Met.Soc. The Royal Meteorological Society has for a number of years past collected observations on natural periodical phenomena, such as the date of the flowering plants, the arrival, song and nesting of birds, the first appearance of insects, &c. These observa-



tions were supervised and discussed by the Rev. T. A. Preston until 1888, since which time they have been under the direction of Mr. E. Mawley. The year 1892 was on the whole very cold and backward. The frequent frosts and dry weather during the first five months greatly retarded vegetation, and consequently all the early wild flowers were very late in coming into blossom. Bush fruits and Strawberries were, as a rule, good and fairly plentiful. Plums and Pears were almost everywhere a failure, and Apples were considerably under the average. The Wheat crop was a very light one, owing in part to the attacks of blight brought on in many places by the frost in June. Oats, Beans, and Peas were much under the average, while Barley was the chief crop of the year. Potatoes, Turnips, and Mangolds were above the average. During August butterflies were very numerous, the clouded yellow butterfly being exceptionally abundant.

2. "Relation between the Duration of Sunshine, the amount of Cloud, and the height of the Barometer;" by Mr. W. Ellis, F.R.A.S. This was a discussion of the observations made at the Royal Observatory, Greenwich, during the fifteen years 1877-91, from which it appears that in the months from February to October there is, on the whole, a distinct probability of increased sunshine and correspondingly less cloud with increase of barometer reading. The winter in all conditions of the barometer is uniformly dull. Mr. Ellis says that it is evident that high barometer in summer presages increased sunshine, that the effect is less pronounced in early spring and late autumn, and that it becomes slightly reversed in winter.

3. "Winter Temperatures on Mountain Summits," by Mr. W. Piffé Brown. In this paper the author gives the lowest winter temperature on the summit of Y Glyder fach, four miles E.N.E. from Snowdon and 3262 feet above sea level, as recorded by a minimum thermometer during the last twenty-five years. The lowest temperature registered was 9° during the winter 1891-2.

### ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE.—February 14th. Present: Prof. M. Foster, in the chair; Dr. Masters, Sir J. T. D. Llewelyn, Mr. McLachlan, Rev. W. Wilks, Mr. Michael, Prof. Church, Prof. Oliver, Prof. Farmer, and Rev. G. Henslow, Hon. Sec.

*Soil with Mites, &c.*—Mr. Michael reported upon a sample of earth sent from Jura Forest, and found that it contained wireworms, some Thysanuridae and mites (Gamasidae). The mites were in this case not injurious to plant life, but rather "friends," as they were predatory on other animals. In another sample sent there were Thysanuridae and wireworms, but no mites. The soil being in a bad condition should be treated with gas-lime, or other usual remedies for wireworm. Mr. McLachlan observed on the importance of such investigations as the present, as they revealed what creatures were "friends" to the cultivator, such being very often regarded unwittingly as "foes."

*Turnip Devoured by a Vole.*—Dr. Masters exhibited a specimen from Bagshot, in which the whole of the interior had been consumed, nothing but a thin shell of cortex being left. He also showed a drawing of a monstrous Turnip which had grown not unlike a Mandrake in form.

*Burr Knot on Apple Roots.*—Dr. Masters also showed a specimen from a "Burr Knot" Apple tree, a feature characteristic of certain varieties of Apples, such being used for propagating purposes. It was referred to Prof. Farmer for examination.

*Fog Report.*—Prof. Oliver presented the second report on his investigations upon "The Effects of Urban Fog on Cultivated Plants," which will be printed and circulated for discussion at the next meeting. The following is a brief abstract:—"The report deals especially with the physiological aspect of the question, matters of more purely local interest being reserved for a forthcoming communication. The observed action of fog upon plants is described in detail, and the share taken in this action, by the reduction of light on the one hand and by atmospheric impurities on the other, is critically discussed in the light of the writer's experimental results. The position taken up by the author is that 'fog' is, physiologically speaking, a much more complex affair than has been suspected. In presenting his report, Prof. Oliver explained that the present contribution could only be regarded as a very imperfect statement of the subject, and that he was busily employed in following up some of the more novel lines which he has indicated." Prof. M. Foster moved, and Mr. McLachlan seconded the motion, that the report should be presented to the Council.

*Arum with Two Spathes.*—Dr. Masters exhibited a specimen of this common phenomenon, and remarked that no florist had made any attempt to fix it. The question was raised whether it was desirable to do so, as some thought that two spathes were no improvement to the flower.

*African Produce.*—Messrs. J. Wrench & Sons forwarded samples of leguminous and other seeds raised in S. Africa from English origin. As a general result they had remained constant in character. The Committee expressed their thanks to the exhibitors.

### TRADE CATALOGUES RECEIVED.

Dickson & Robinson, Manchester.—*Agricultural Seeds.*  
Ellwanger & Barry, Mount Hope Nurseries, Rochester, New York, U.S.A.—*Fruit and Ornamental Trees, Roses, &c.*  
Little & Ballantyne, Carlisle.—*Farm Seeds.*  
J. C. Schmidt, Erfurt.—*Agricultural and Garden Seeds.*  
Charles Van Geert, Anvers.—*Fruit, Trees, Shrubs, Roses, Hardy Plants, &c.*



### FRUIT FORCING.

**Vines.**—*Early Forced in Pots.*—The state of the crops depends on the management and the condition of the Vines at the time of starting. Those started last October or early in November, and being strong, well-ripened canes from cut-backs, have, under proper management, the Grapes in an advanced stage for colouring. During this stage the berries swell more than at any other, therefore supply fresh top-dressings of rich material, as turfy loam or lumpy well-decayed manure, with a sprinkling every ten days or a fortnight of dissolved bones three parts, powdered saltpetre two parts, and gypsum one part, by weight, mixed and kept dry. This not only feeds, but encourages root formation, and the new rootlets absorb liquid manure, which should be supplied copiously in a tepid state, and not too strong. Maintain a genial condition of the atmosphere by damping available surfaces two or three times a day, especially at closing time, which should be sufficiently early to run up the temperature to 85° or 90°. The floor may also be sprinkled occasionally in the evening with liquid manure, but not too strong, and the ammonia given off will invigorate the Vines and prove inimical to red spider.

*Stopping, Tying, and Regulating the Shoots.*—In houses that were started a few weeks ago the growths will be in a sufficiently forward state for disbudding, but it should not be attempted before the best breaks can be discerned. The operation should be performed gradually, removing the weakest and worst placed shoots first, and ultimately leaving no more than there is room for the full exposure of the foliage to light, always retaining the most promising for fruit. In very vigorous Vines and under close pruning the weakest shoots often show the best, the others being fruitless, or the bunches are loose and badly set. Then it is best to allow two shoots to a spur, one for growth and to give the next year's crop, and the other for bearing in the current year, these precocious shoots being so enfeebled by the current crop as not to be able to form good buds and well-ripened wood for supplying the succeeding one, and should be cut away after the Grapes are cut, otherwise the spur may be lost and the crop nil. Stopping should take place at one joint beyond the bunch where the space is limited, but two joints should be left where there is room for lateral extension. Tie the growths before they touch the glass, bringing them down carefully, as they are liable to break. Allow sufficient room in the ligatures for the swelling of the shoots, and loosen all those that are too tight.

*Vines in Flower.*—The syringing if practised must now be discontinued, and a comparatively dry atmosphere is desirable during the setting process. Condensation of moisture on the glass should be prevented by a little ventilation constantly, but without causing a draught. The temperature must not be less than 60° to 65° at night and 70° to 75° by day artificially. Shy-setting varieties require careful fertilisation, brushing the bunches lightly with a camel's-hair brush, and then follow with the same charged with pollen collected from such free setters as Black Hamburgs. Muscats should have the bunches well up and with their points to the light, and if they are numerous it is better to remove the surplus bunches before they come into flower than to defer it until the Grapes are set. They should have a night temperature of 65° to 70°, 5° more by day artificially, and 10° to 15° from sun heat. Careful fertilisation is imperative in their case, attending to it on a fine day after the house has been ventilated a short time always when the "caps" part readily from the tips of the flowers, as then the stigmas are ready to receive the pollen.

*Thinning Grapes.*—This work must never be allowed to get into arrears. Free-setting varieties should be thinned as soon as they are fairly out of flower, taking out the smallest berries first and then going over the bunches again, so as to leave only sufficient berries to form a compact bunch, each berry being allowed space to swell to its full extent without wedging or losing its natural form. This requires the exercise of a little judgment, and can only be acquired by experience. Muscats and all shy-setting varieties should not be thinned until the properly fertilised berries can be distinguished, as they may by their taking and retaining the lead in swelling, whilst the unfertilised remain almost stationary in this respect.

*Feeding.*—When the Grapes are set and thinned every encouragement should be given to their swelling, supplying liquid manure in a weak state liberally, always tepid, and surface roots may be accelerated by light mulchings of lumpy manure or turf, kept moist and sprinkled every fortnight or so with a good handful per square yard of the mixture advised for Vines in pots. Even half a pound per square yard may be given where the Vines are weak and carrying heavy crops, and three such dressings are usually enough—one when the Grapes are set, a second when they are about half swelled, and the third just before or when they are colouring. The last dressing will also aid the Vines to plump the buds for producing next year's crop. Maintain a genial condition of the atmosphere by damping available surfaces in the morning, at closing time, and in the evening. Make the most of sun heat by early closing, running up to 85° or 90°, and this will maintain a good temperature into the night, when it should gradually fall to the minimum



figure. Admit air in the morning before the sun has raised the temperature more than 5° to 10°. This should be done without lowering the temperature, and the Vines will be saved from scorching.

**Strawberries in Pots.**—Those ripening should have a rather dry and freely ventilated atmosphere to secure quality and aroma. The temperature for fruits swelling off should be 65° at night, 70° to 75° by day, advancing to 80° or 85° with sun. The second early plants having set well should be reduced to six or eight per plant if fine fruit is desired. When the fruit is fairly swelling the plants may be moved to a house with a temperature of 60° to 65° at night, 70° to 75° by day, with an advance to 85° from sun heat, supplying them with liquid manure copiously, examining the plants once or twice a day, even three times in bright weather, and watering such as require it. Where there are vineries and Peach houses which are started periodically, and Strawberries are grown in pots on shelves near the glass, there will be no need to move them, except to meet special requirements, as they will afford successional supplies of fruit. Introduce more plants as such houses are set to work, also place those in cool houses in the positions they are to occupy for fruiting. If plants are placed in span-roofed frames, half plunged in or stood upon ashes, fruit much finer and a fortnight to three weeks earlier than that in the open ground will be secured, the early and second early varieties producing freely, and are most desirable, especially Noble and Auguste Nicaise.

**Melons.**—The weather has not been unfavourable to forcing operations generally, and the plants are making satisfactory progress, especially those that were transferred to the ridges from the seed pots, the bottom heat being supplied by hot-water pipes in a chamber. In severe weather it is advisable to proceed carefully, as highly heated pipes do considerable injury to the foliage and invite attacks of red spider. A temperature of 60° to 65° at night, 70° to 75° by day, and an advance to 80° or 85° with sun will be suitable, ventilating a little at 75° and close at 85°, rising to 90° or more with plenty of atmospheric moisture. Plants that were shifted into 5 or 6-inch pots should be transferred to the ridges or hillocks, firming the soil well about the balls. Provide a stake to each plant secured to the bottom wire of the trellis; train with a clear stem to the trellis, rubbing off the laterals to that height directly they are discernible, and allow the leading shoots to extend two-thirds up the trellis before stopping. If the plants are short-jointed rub off every alternate lateral on the opposite sides of the principal shoots. Under favourable conditions the laterals will show fruit at the second or third joint, otherwise stop them at the second joint. Keep the bottom heat steady at 80°. Water carefully, and always at a little distance from the stem. A genial condition of the atmosphere should be maintained by damping in the morning and afternoon, also before dark if the surfaces become dry.

**Cucumbers.**—Plants raised from seed sown at the new year, and transferred from the small pots to the ridges or hillocks in the Cucumber house, need not be stopped until they have extended two-thirds up the trellis. Train the laterals about 1 foot distance apart, and do not stop them until they have extended about two-thirds across their allotted space sideways. A vigorous growth is thus secured, and the plants will crop much better and longer than those which are pinched from near the bottom of the trellis with a view to early fruit. If the latter practice is followed, care must be taken not to overcrop the plants, or the growth will be started, and not enough made for successional bearing; upon which depends a regular supply of fruit. If the plants have been shifted into larger pots, and not yet turned out into the fruiting bed, it should be done before they become cramped at the roots.

**Winter Fruiters.**—The plants that have been in bearing will be much benefited by removing some of the surface soil, and supplying fresh lumpy loam, sprinkling a handful of superphosphate of lime over each square yard. Now the light and sun heat tell advantageously and the plants feel their influence, a greater supply of atmospheric moisture is needed. Maintain a night temperature of 65°, allowing 5° more when the external air is mild, and 5° less in the morning when the weather is severe, 70° to 75° by day artificially, and keep through the day at 80° to 85° or 90° from sun heat, always securing a good heat in the afternoon by early closing, and if the temperature rise to 95° or 100° it will benefit the plants. Enough ventilation in the early part of fine days should be given to insure a change of air, avoiding cold currents. Liquid manure once or twice a week will be required by plants coming into bearing. Thin the fruits well, remove superfluous growths, bad leaves, tendrils, and male blossoms, stopping the shoots one joint beyond the fruit, and in no case permit crowding or overcropping.

The plants in pits and frames are moving now the weather has become more favourable, but the foliage is tender, therefore ventilate carefully, avoiding currents of cold air, placing a thin mat or some hexagon netting over the openings so as to break the force of cutting winds. Cover the lights with double mats at night, and attend to the linings regularly, renewing the old linings as required. Prepare material for fresh beds. Two parts Oak or Beech leaves, and one part stable litter, make the best beds at this time of the year. These should be thoroughly incorporated and thrown into a heap about a fortnight before it is desired to make the beds. In a few days it will be seen whether there is sufficient moisture to produce decomposition, to which fermentation or heat is due; if not, turn the whole, sprinkling with water so as to moisten the mass. When in good heat turn again outside to inside, blending the whole well, two or three turnings being required at intervals of four days to sweeten the material—and allow the rankness to pass off. The bottom heat of fermenting beds should be 85° to 90°.

## THE KITCHEN GARDEN.

**Celery.**—A first sowing of Celery ought now to be made. One of the dwarf early white varieties, Veitch's Early Rose being a good companion for these, would be the best for ordinary purposes; but if for early exhibition a taller variety, such for instance as Wright's Giant White, is preferable. Sow the seed rather thinly in pans, place on a hotbed or in rather brisk heat, cover with a square of glass, shade heavily and keep uniformly moist till germination takes place, after which gradually expose to daylight and transfer to a shelf still in moderately strong heat. Early Celery does not always germinate so well as is desirable, therefore sow the seed rather freely though not thickly, and if the first sowing fails make a second sowing at once.

**Cauliflowers.**—Small plants wintered in cold frames would be more readily planted if first established in small pots. Placed singly in 3 inch or slightly larger pots, good loamy soil being used, and set for a few weeks on a warm greenhouse shelf or in a slightly heated pit, they would develop into strong well rooted plants that would move into handlights and other sheltered quarters without experiencing much of a check. Any plants raised early this year should be also potted in preference to pricking in boxes, as they cannot often be moved out of the latter with a good ball of soil about the roots. A light position in gentle heat is the best place for these young plants and also for pans containing newly sown seed. If there is a poor stock of autumn raised plants of Dwarf Erfurt, Early London, or other favourite second early forms, sow seed in pans or boxes at once. Also raise early plants of Autumn Giant, which if properly treated will commence hearting in late in August. Should a good stock of Early Forcing or Dean's Snowball have been raised, put out the surplus plants or those not required for growing under glass, either in rough frames at the foot of south walls or on warm borders, before they become badly root-bound, and protect with mats.

**Onions.**—It is yet too early to sow seed in the open, but if extra fine exhibition bulbs are required plants must be raised under glass. Ailsa Craig, Anglo-White Spanish, Sandy Prize, Improved Wroxtton, and Rousham Park Hero are all more or less popular with exhibitors; and seed being rather dear, sowing in heat is also the most economical plan. If the seed is sown thinly in pans, or better still large shallow boxes, the plants can eventually be transferred direct from these to the open ground. A vinery being forced, or other moderately warm forcing house, is suitable for raising Onions, the plants being raised well up to the light before they become drawn and weakly.

**Leeks.**—If these are also wanted extra strong and early for exhibition purposes, seed of The Lyon, Dobbie's Champion, Prizetaker, or any other large-growing variety should be sown at once in heat, the plants to be treated very similarly to early Celery.

**Carrots.**—Unless there is an extra demand for tender young Carrots, two good sowings under glass will generally meet the case, successional supplies being had from a warm border. In very many instances no glazed lights can be spared for early Carrot culture, and in all such cases it is a good plan to form a hotbed in a sheltered position, surmounting this either by a rough frame or with boards held together by means of outside stakes driven well into the manure. About 6 inches of fine sandy soil should be placed on the manure, and the Carrot seed be then sown either in shallow drills 8 inches apart or thinly broadcast, and covered with a little sifted soil. If the variety Nantes Horn is selected, a single bed will yield numerous bunches of early and very tender roots by way of thinnings, those reserved being left till the roots are large enough for the July or early August shows. Roots thus grown are particularly well formed and have clear skins.

**Early Radishes.**—These may always be sown either in drills midway between the rows of Carrots or thinly broadcast. They will be fit for use some time before all the space is needed by the Carrots. Supposing these beds are formed and the seed sown late in February or early in March, temporary protection in the shape of a rough framework supporting mats or old carpeting will be needed, though in some cases strong stakes about 4 feet high are used for the double purpose, keeping the boards together and supporting a covering of trebled fish nets, all the protection afforded. If desired, such heaps of manure and soil may be utilised for growing Vegetable Marrows during the summer.

**Early Turnips.**—Frosts have destroyed nearly or quite all the roots left in the open, and the stock under cover is far from being enough in most cases, to carry on the supply till young Turnips are available from the open borders. This being so those who have the convenience ought to grow some under glass. Anything like hard forcing is out of the question, but the Extra Early Milan can be forwarded very considerably in a frame on a gentle hotbed. The frame after being set on the bed should be about half filled with some of the shortest of the heating material, on this being placed 6 inches of good loamy soil. Make the latter somewhat firm; sow the seed thinly and broadcast, and cover with fine soil. Either cover with glazed lights and mats during nights, or with the latter only. In the former case ventilate rather freely after the plants are up, giving abundance of air during warm weather, and thin early where at all crowded. If the plants are left about 4 inches apart the thinning-out can be done according as the roots attain a serviceable size.

## PLANT HOUSES.

**Alcasias.**—Plants that need more room should be repotted at once. Work old decomposed material carefully from amongst the roots, which is best done by washing it out in tepid water. The plants should be allowed to drain thoroughly before they are again placed into pots.



If the stem of the plants have become lengthy the lower portion may be cut away. Liberally drain the pots or pans and put the plants in the pots, so that when the surface is mossed the lower leaves just rise out of it. These plants grow well in a compost of peat in lumps, fair sized pieces of charcoal, and living sphagnum moss. For strong growing kinds fibrous loam may be used with the peat. When this is employed some coarse sand should also be added to the compost. After potting place the plants where they can enjoy a close moist heat. If a gentle bottom heat can be given them all the better. Syringe freely, but water carefully until the plants commence rooting freely.

**Anthurium crystallinum.**—Plants of this kind may also be repotted. Young plants that have the compost in a sweet condition about their roots may be placed into larger pots; and others that have decayed material about them should have it removed, and be treated as advised for *Alocasias*.

**Anthurium Andreanum.**—Established plants that need repotting as well as young plants, may be treated the same as advised above. Plants that have grown tall should be cut close back, when they will break freely from the base, and make excellent bushy plants in the course of a season. When once cut-back plants have fairly broken into growth the old material may be removed from the roots, and the plants placed into smaller pots. The stem can be cut into lengths of two or three joints, and the pieces placed singly in sand and sphagnum moss into 3-inch pots. The portions of stems put into brisk heat in the propagating frame will soon form roots, and by the winter will make excellent plants for flowering on the side stages of the stove.

**Anthurium Schertzerianum.**—Specimens that have been resting in a temperature of 50° may be introduced into the stove, when they will quickly commence to push up their flower spathes. Those kept in the stove will be very much benefited by being rested for a time in a lower temperature. While under this treatment give the plants less water. Water those carefully at first that are introduced into the stove. All plants that have commenced root activity may be top-dressed or repotted. These plants do not need much material about their roots. They require an open compost, and abundance of water when growing. This variety is not very particular about soil; we find the plants succeed well in ordinary moss and crocks, also in lumps of peat, charcoal and moss, and equally well in fibrous loam, moss, crocks and charcoal. Fine soil should not be used, for very rarely do the plants succeed in it. They grow rapidly when supplied with fresh healthy material about their roots.

**Nepenthes.**—Plants that need repotting, or placing in larger baskets, should have immediate attention. If grown in pots, turn them out and place the plants into those of a larger size without disturbing the roots. If in baskets, the old baskets should be placed inside others, and the latter filled with fibrous peat and charcoal, with a good layer of living sphagnum moss round the sides and on the surface. These plants do well in loam, sand, and charcoal, with moss on the surface; or they may be successfully grown in a mixture of peat, sand, and living sphagnum in equal proportions. Plants that have grown cut back, but do not disturb their roots until they have commenced new growth. Portions of the stem may be inserted in small pots with the leaves attached, and placed in a brisk heat in a propagating frame. Shoots on established plants that have made four or five leaves may be pinched; this not only keeps the plants dwarf, but induces them to branch and produce pitchers freely.

## THE BEE-KEEPER.

### APIARIAN NOTES.

OWING to the temperature of February being lower than it was in January bees have not been much abroad. Occasionally during sunshine a few venture out scanning the flowers, but soon return to their hives. With one exception mine have not yet had a thorough flight, but as all are healthy I have no anxiety for them. With Heaths, Crocuses, Snowdrops, Hepaticas, Arabis, Hellebores, Aconites, and other flowers there will be inducement to the bees to work when the temperature becomes a little higher. A watch will be kept over their movements, and if there is the slightest suspicion of effete queens they will be examined so as to ascertain their true condition, and disposed of accordingly.

#### ENTRANCES.

These will be kept at their winter's width, especially during the night, until the bees show signs of being dissatisfied or oppressed, when they will be widened a little as circumstances demand. My hives are all dry, and will not be interfered with, but there may be some who have their bees in hives not similarly arranged or constructed that are damp. Such hives should be overhauled on the first opportunity, quilts dried, and the frames with the bees transferred to a clean, dry, and slightly heated hive. Those short of stores should be fed as early as convenient with not less than 6 lbs. of the best cane sugar, then left alone.

#### LEGISLATION FOR FOUL BROOD.

It appears that Messrs. Cowan and Carr are still agitating for assistance from Government for suppressing foul brood in hives.

They cannot be complimented on their success if they can only effect this object by the clumsy and expensive method of destroying the implements necessary for honey gathering. It is to be hoped that Government will not accede to their unnecessary demands, especially as foul brood can be easily cured without such drastic modes as destruction. However, if it could be made illegal to allow untenanted foul-broody hives to stand in any apiary much good would be done.

No doubt it would please the King William Street *savants* if they could have the nomination for appointment of inspectors, but there are matters of grave importance to be considered in this reference. Instead of inspectors subduing foul brood they would be just as likely to be the means of spreading it, while they would certainly be the direct cause of much conflict. I am not a law-breaker, but if such an act were passed I would do all in my power to resist its application. I should resent any interference whatever with my hives by an inspector, who might have the germs of infection about him from the apiary of his last inspection.

I never open my hives after October until they have swarmed, and I would disallow any stranger to do so either who may have no more knowledge than I possess myself. Nor would I allow anyone to injure my bees or their brood with smoke. Common sense has taught me how to have an immunity from foul brood amongst my hives for more than thirty years, and I trust Parliament will reject any attempt to foist upon the public measures at once arbitrary, unjust, and unreasonable at the expense of the taxpayer.

#### WINTER COVERINGS.

I recently commented upon several absurd ideas advanced by some American apiarians. I now quote one more sensible. Mr. A. E. Manum, in *Gleanings* for February 1st, says, after covers are removed he "places over the frames some kind of quilts, and over these 6 or 8 inches of some kind of absorbent, such as dry wood shavings." He also explains the advantages of such coverings in an intelligent way—just the same methods that have been repeatedly advised in the pages of the *Cottage Gardener* and *Journal of Horticulture* for upwards of thirty years.—A LANARKSHIRE BEE-KEEPER.



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Chrysanthemums** (*J. W.*).—We have received the two blooms, if blooms they can be called, of *Etoile de Lyon*. No doubt larger and fresher examples would be useful for decorative purposes, and probably the small ones you posted did not arrive in the condition you expected they would. They were so crushed as to be useless.

**Heating a Greenhouse** (*Heater*).—The question of boiler is very much a question of fuel. With coke mainly a coil or conical boiler would answer; with coal mainly you would perhaps find a saddle boiler the most suitable. Either kind rightly set and the pipes properly arranged would, with appropriate fuel, answer your purpose admirably. The prices of boilers are given in the lists of vendors.

**Peach Buds and Paint** (*E. S.*).—Keeping a house close for some time immediately after painting the woodwork would have a deleterious effect on the buds of Peach trees, and we are not surprised to hear that many of them are turning brown and falling prematurely. If provision is made for heating the house, fire ought to have been employed for excluding frost from the plants with constant ventilation.

**Sheltering Screens** (*A. H. E.*).—If the enclosure is small, and a medium-sized hedge is only needed, and not at the same time a fence against cattle, the Evergreen Privet would answer your purpose, and it grows quickly in good soil; as a barrier and shelter combined a good Thorn or Quickset hedge is the best. If the enclosure is large, and you desire tall screens as quickly as possible, you may do as Mr. Cannell did at Swanley—plant hedges of the Lombardy Poplar, and trim them as desired with pruning shears.



**Moss on Lawn (Ipswich).**—As the soil is of a somewhat clayey nature, it would be much benefited by a dressing of lime applied in a freshly slaked state; it would destroy the moss and improve the soil, though it may brown the grass more or less. Little browning, however, would occur if the lime was slaked off the ground, and when cool distributed evenly by hand at the rate of a peck per square rod, the lime having been passed through a sieve with  $\frac{1}{4}$ -inch mesh to rid it of stones. Air-slaked lime, that is, freshly burned lime, placed in a shed so that air can act upon it freely, and when fallen to a powder may be used as before advised. Another plan is to take equal parts of air-slaked or freshly slaked lime, wood ashes from twigs as hedge clipping or "drawings" of brick ovens, and soot, all perfectly dry, mix, and apply at the rate of a peck per rod. This is one of the best manures for lawns, and equally good against moss and worms. It is best applied early in spring, say February or March. Lawn sand is used to destroy Daisies and other weeds. It must be applied in strict accordance with the instructions; it generally browns the grass, but this soon recovers and grows vigorously afterwards.

**Carnations Dying (Mrs. Savory).**—We are sorry for the misfortune that has befallen your plants. As you say the specimen sent is one of the best we are obliged to advise you to burn every one of them. They are devoured by a fungus (*Helminthosporium*), and every vestige should be burnt for destroying all the spores possible. It is stated in the "Carnation Manual" (Cassell & Co.) that Mr. Charles Blick, gardener to Martin Smith, Esq., banished the fungus by persistently sponging the plants with a weak solution of Gishurst compound, but this would be long before the attack was so deeply rooted as in your plants. Sulphur has no effect in destroying the fungus, but precipitated carbonate of copper and ammonia solution might prove a deterrent, as it is against fungus on Tomatoes. We are not aware that precipitated copper carbonate is kept in stock by chemists, and it is best to manufacture it at home. Procure 3 lbs. of copper sulphate, and dissolve it in hot water in a tub. In another vessel dissolve  $3\frac{1}{2}$  lbs. of washing soda in hot water. When cool pour the soda solution slowly into the copper solution, then add water until the tub is full. Stir the solution thoroughly and let it stand twenty-four hours, then syphon off the clear liquid and add fresh water. Stir again and allow the solution to stand twenty-four hours, syphon off the clear liquid as before, then remove and dry the sediment, which is carbonate of copper. The half of a petroleum cask answers very well for precipitating the copper, and a syphon is easily formed of half-inch garden hose. There will be 1 to  $1\frac{1}{2}$  lb. of copper carbonate. The liquid ammonia, strength 26°, may be procured of any chemist. Where there is little use for an instrument to apply fungicides and insecticides a syringe specially made for spraying answers very well. As a syringe "Stott's" is efficient for spraying. A close damp atmosphere favours the growth of the fungus.

**Pruning "Maiden" Trees (J. B.).**—Maiden trees of one season's growth have only one stem. For forming bushes this should be cut down to within a foot from the ground, and three or four branches encouraged equi-distant, and as nearly uniform in strength as possible. In the autumn, after the leaves fall, these branches should be cut back to about a foot, and the tree will then form sufficient branches for a good foundation and a free open bush for bearing. These main branches should be more, rather than less, than a foot apart, and the tips of the branches only shortened in the interest of symmetry and uniformity. The side growths issuing from these main branches may be shortened in summer—say in June—to six good leaves, and any further growths pinched to one leaf, these summer-pruned shoots to be cut back to about an inch of the base in winter. When the branches of trees are very wide apart, and the summer growths not so strong as to crowd the trees, early summer pruning is not required. Some of the most fruitful trees we know have the main branches 2 feet asunder. They have never been shortened, except about twice after planting; and they are only pruned once a year—in the autumn. The heavy crops of fruit keep the growth in subjection. These are not pigmy trees, but large and very real fruit producers. Naturally formed bush trees are the easiest of all to manage, and if the growth is too exuberant in the third year it is an excellent plan to carefully dig up and replant the trees. The simple method of forming ordinary open bush trees applies to all kinds, but Pears, Plums, and Cherries are often grown as pyramids, and then a central leader must be secured to a stake, and side branches at the same time encouraged, not less than a foot apart, and the lower ones longer than those above them. You have done right in planting "high" in your strong soil, and in a few years replanting will probably be found highly advantageous in fruit production. If fruit buds form at the extreme ends of branches, those ends must be cut back to the smaller growth buds if further extension is desired. "Seedling Apple" stocks are "free" stocks, and in growth more resemble the character of the Crab than the more precocious Paradise stock. They will probably answer in your soil, especially if the trees are replanted, should undue luxuriance render this desirable in the course of two to four years. The chief desiderata in fruit culture are surface roots, firm yet stout wood, the branches so thinly disposed that the sun can shine between them right through the trees, and cleanliness. Secure these essentials and you will have plenty of blossom buds, to be followed by crops of fruit, birds and weather permitting.

**Stock for Plums (N. E.).**—The Damson, White Pear Plum, St. Julien, and Mussel stocks are all used for Plums. Damson and White Pear Plum may be termed dwarfing stocks, and as such only suitable for garden trees—half-standards, bushes, pyramids, cordons, espaliers, and strong-growing varieties which it is desirable to dwarf.

Except in free, rich soils, neither is good for the very prolific kinds of Plums as standards on grass, they simply bearing themselves to death. St. Julien is, perhaps, the best stock for the Early Rivers, as well as others (where the ground is kept bare, as in market gardens, and the soil is rather strong and not deeply cultivated), on account of its fibrous root formation. For standards, especially for orchards in grass, the Mussel stock answers well, and that we advise for your purpose. The Sloe stocks, so-called, are very little used by nurserymen. The Blackthorn or Sloe (*Prunus spinosa*) makes a dwarfing stock very liable to push infinite suckers; the Bullace (*P. instititia*) forms a better stock for dwarfing purposes, yet it throws up suckers much more freely than the common or wild Plum (*P. domestica*), all merely sub-species of *Prunus communis*, which is found wild here and there throughout Europe and North Africa. The Sloe, however, is confined to Europe, but the Bullace, according to Hooker, extends to North Africa and the Himalaya. It would be better to procure some Mussel stocks, as no reliance can be placed on the Blackthorn. The large, round, red Plum, which comes into use with Rivers' Prolific, or soon after, may be Early Orleans. It is a favourite in the London markets, but the tree is not a great cropper, and requires a warm strong soil. A far more profitable Plum is the Czar, which is nearly as early as Rivers' Prolific, round, purplish red, and carries a fine bloom. The tree is a very free grower, of upright habit, and produces its fruit in clusters profusely. Sultan may be termed an improved Prince of Wales, the tree being, unlike that variety, a free grower, and not liable to collapse suddenly when it gains a good size. Goliath is also a purplish red Plum, second early, and a heavy cropper; but it is addicted to dying suddenly, like Prince of Wales, when the tree becomes of profitable size. Emperor is later, has roundish-oval, large, Orleans-like fruit, the tree being vigorous, and produces fruit abundant. This is an old variety, known in North Wales as Denbigh, where it succeeds admirably, but is known as Cox's Emperor generally. Rivers' Monarch is a valuable late Plum that will force itself into popularity.

**Names of Plants (G. E.).**—1, *Ornithogalum nutans*. 2, Specimen damaged, kindly send another and give particulars as to the habit of the plant. (E. S.).—*Dendrobium speciosum*, probably var. Hilli.

#### COVENT GARDEN MARKET.—FEBRUARY 22ND.

No alteration. Market steady, with prices firm.

##### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, half sieve .. ..	1	0	to	3	Lemons, case .. ..	10	0	to	15
" Nova Scotia, per					Oranges, per 100 .. ..	4	0		9
barrel .. ..	12	0		17	Peaches, per dozen .. ..	0	0		0
Cobbs, Kent, per 100 lbs.	0	0		125	St. Michael Pines, each ..	3	0		6
Grapes, per lb. .. ..	0	6		3					

##### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Kidney, per lb. ..	0	6	to	1	Mustard and Oress, punnet	0	2	to	0
Beet, Red, dozen .. ..	1	0		0	Onions, bunch .. ..	0	3		0
Carrots, bunch .. ..	0	4		0	Parsley, dozen bunches ..	2	0		3
Cauliflowers, dozen .. ..	2	0		3	Parsnips, dozen .. ..	1	0		0
Celery, bundle .. ..	1	0		1	Potatoes, per cwt. .. ..	2	0		5
Coleworts, dozen bunches	2	0		4	Salsafy, bundle .. ..	1	0		1
Cucumbers, dozen .. ..	8	0		12	Scorzonera, bundle .. ..	1	6		0
Endive, dozen .. ..	1	3		1	Seakale, per basket .. ..	1	6		1
Herbs, bunch .. ..	0	3		0	Shallots, per lb. .. ..	0	3		0
Leeks, bunch .. ..	0	2		0	Spinach, bushel .. ..	3	0		3
Lettuce, dozen .. ..	0	9		1	Tomatoes, per lb. .. ..	0	2		0
Mushrooms, punnet .. ..	0	9		1	Turnips, bunch .. ..	0	3		0

##### PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to	12	Foliage plants, var., each ..	2	0	to	10
Aspidistra, per dozen ..	18	0		36	Genista, per dozen .. ..	10	0		15
Aspidistra, specimen plant	5	0		10	Hyacinths, dozen pots ..	8	0		12
Azalea, per dozen .. ..	24	0		42	Lily of the Valley, dozen				
Cineraria, per dozen ..	8	0		12	pots .. ..	12	0		18
Cupressus, large plants, each	2	0		5	Lycopodiums, per dozen ..	3	0		4
Cyclamen, dozen pots ..	9	0		18	Marguerite Daisy, dozen ..	6	0		12
Dracæna terminalis, dozen	18	0		42	Myrtles, dozen .. ..	6	0		9
" viridis, dozen ..	9	0		24	Palms, in var., each .. ..	1	0		15
Euonymus, var., dozen ..	6	0		18	" (specimens) .. ..	21	0		63
Evergreens, in var., dozen	6	0		24	Primula, single, doz. pots	4	0		6
Ferns, in variety, dozen ..	4	0		18	Solanums, per dozen .. ..	9	0		12
Ferns (small) per hundred	6	0		8	Tulips, dozen pots .. ..	6	0		9
Ficus elastica, each .. ..	1	6		7					

#### AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Anemones (French), dozen					Mignouette, 12 bunches ..	3	0	to	6
bunches .. ..	2	0	to	6	Mimosa, French, per bunch	1	0		1
Arum Lilies, 12 blooms ..	2	0		4	Narciss, var., French, dozen				
Azalea, dozen sprays ..	0	6		1	bunches .. ..	3	0		6
Bouvardias, bunch .. ..	0	6		1	Orchids, per dozen blooms	3	0		12
Camellias, doz. blooms ..	1	0		3	Pelargoniums, 12 bunches	8	0		12
Carnations, 12 blooms ..	2	0		3	Pelargoniums, scarlet, doz.				
Chrysanthemums, dozen					bunches .. ..	6	0		9
bunches .. ..	4	0		9	Primroses, dozen bunches	1	0		3
Daffodils, double, dozen					Primula (double) 12 sprays	0	9		1
bunches .. ..	4	0		9	Roses (French), per doz. ..	2	0		6
Daffodils, single, dozen					boxes, 100. .. ..	5	0		8
bunches .. ..	6	0		12	" (indoor), dozen ..	2	0		4
Eucharis, dozen .. ..	4	0		6	" Red, per doz. blooms ..	3	0		9
Gardenias, per dozen ..	6	0		12	" Tea, white, dozen ..	1	6		3
Hyacinth, Roman, 12 sprays	0	6		1	" Yellow, dozen .. ..	4	0		6
Lilac, white, French, per					Suowdrops, dozen bunches	1	0		2
bunch .. ..	3	0		5	Tuberose, 12 blooms ..	1	0		1
Lilium longiflorum 12					Tulips, dozen blooms ..	0	6		2
blooms .. ..	9	0		12	Violets, Parme, French, per				
Lily of the Valley, dozen					bunch .. ..	2	0		3
sprays .. ..	0	6		1	Violets, Czar, French, per				
Maidenhair Fern, dozen					bunch .. ..	1	6		2
bunches .. ..	6	0		9	Violets, Victoria, French,				
Marguerites, 12 bunches ..	3	0		6	dozen bunches .. ..	1	6		2





### SPRING CROPPING.

EVERY farmer having a full supply of Thousand-headed Kale now will agree with us that it is a crop worthy of a prominent place both in spring and summer cropping. Even those without any must admit the high value and great usefulness of it for every reason that a practical man can have for the cultivation of his most cherished crops. It is for such men especially that we are now writing, to give them a timely reminder of the un wisdom of neglecting a means of obtaining an abundant supply of nutritious green food at midwinter; of relieving the run upon hayricks; of imparting freshness to the milk yield; of supplying the ewe flock with a safe substitute for roots before, during, and after the lambing season. It grows under high cultivation upwards of a yard in height, the stems are thickly set with side shoots, and it is so wholesome that sheep folded upon it during winter and spring show no tendency to scour. An acre of it affords enough food to sustain a hundred sheep for a month, or much longer if they have dry trough food as well. It is quite hardy, and is simply invaluable this winter with hay rising in price almost weekly; yet it is only occasionally to be met with. In our frequent long journeys it is only very occasionally that we see it being turned to full account; yet there can be no more reason for neglecting it than there is for not having a full supply of, say, Lucerne, or any other of our best fodder crops.

Under good management it is quite possible to have plenty of Thousand-headed Kale all the year round; but the fact of its being so hardy renders it most valuable when other crops cannot be had. For use in the last three months of the year it is drilled in April and May, or if sown in seed beds for transplanting then make sowings in March and April to transplant in June and July. For spring and early summer use drill the seed in July and August. There are advantages as well as disadvantages in either of these methods of culture. By sowing in seed beds 2 lbs. of seed affords sufficient plants for an acre, with an ample surplus for failures. The plants are kept under close observation during the critical early stages of growth, and are easily protected from insects; but they involve the additional cost and risk of transplantation. By drilling the cost of transplanting is practically avoided, though it may be found necessary to transplant some to fill vacancies. The checked growth, so unavoidable in transplanting, is avoided; yet about three times the quantity of seed is required, and the young plants are exposed to attacks of insect pests which may destroy the whole of them.

In some soils, more particularly those which are light and sandy, club-root may affect the crop so seriously as to spoil it. To combat this use heavy dressings of farmyard manure, transplant large vigorous plants, which, whether purchased or home-raised, must have the stems examined, all maggot swellings cut off, and the roots dipped in a puddle of clay, soot, and lime, moistened and brought to the proper consistency with strong soapsuds and petroleum, first mixed by pouring a wineglassful of petroleum into a gallon of hot soapsuds. If there is any reason to fear attacks of this pest among drilled plants, a liberal dressing of chemical manures (always beneficial), would do much good in promoting vigorous growth from the seed germination. In any case these soluble salts are desirable, both for vigorous growth of the young plants, and for bulk of crop.

Plant or thin to 30 inches apart, so that the horse-hoe may be used freely among the plants, and when the crop is transplanted, the hoe can be used both along and across the field, as the plants stand in true line both ways. This is easily

managed by reversing the hoes of a steerage or horse-hoe, setting them 30 inches apart, marking the land first one way, and then crossing the other way, each plant being placed where the lines intersect. Accuracy and dispatch are thus insured, and the planting is done with marvellous celerity; often with much needless roughness and exposure of plants, which we have seen shot out of carts in heaps on bright hot days, to be dropped singly by boys for the planters. The severe check thus given to the plants might be avoided, though we must admit that they recover from it and grow freely enough to produce a useful crop.

The first drillings may follow sheep folds on Rye or late Swedes; the former, preferably, because Swede folds answer so well as a preparation for spring corn. Summer drillings follow Winter Oats conveniently if the land is clean, chemical manures only being used liberally, as there is no time for carting farmyard manure then. A surface dressing of nitrate of soda now promotes vigorous growth in the summer-sown plant.

### WORK ON THE HOME FARM.

The time has come for top-dressings of chemical manures to be given to permanent pasture, mixed seeds of Grasses and Clovers, Vetches and Oats, and winter corn. First comes the grass and other fodder crops intended for hay or silage, all which we like to have the manure on by the end of February. Never have we had better results than those from using  $\frac{1}{2}$  cwt. nitrate of potash,  $\frac{3}{4}$  cwt. nitrate of soda,  $\frac{1}{2}$  cwt. mineral superphosphate, and  $\frac{1}{2}$  cwt. steamed bone flour, or  $2\frac{1}{4}$  cwt. per acre of the best possible combination of nitrogenous and mineral manures. It was solely owing to its high price that we ceased using nitrate of potash, taking the muriate as a substitute. It is by using such a mixture yearly that we have sustained fertility in the soil wherein these important crops grow. Avoid using nitrate of soda alone on permanent pasture; use it there always in combination with the other manures we mention.

To both winter Oats and Wheat a top-dressing of nitrate of soda may be given to good purpose in March. One or even two hundredweight per acre where mineral manures were used when the corn was sown, induces growth of remarkable vigour, and a corn yield altogether above the average. In good mixed soil it is still entirely possible to grow Wheat profitably by the use of reliable seed, good manure, and early sowing. From four to eight hundredweight of soot per acre may also now be used as a top-dressing both for corn and fodder crops. The manurial matter in soot is sulphate of ammonia; it may be used advantageously on permanent pasture where mineral food is known to be present in sufficient quantity, but where soil is deficient in mineral food, then basic slag or superphosphate should be used with the soot. Avoid mysterious compounds of soot under fanciful designations. Soot cannot be regarded as a complete manure, because it is only carbon in combination with sulphate of ammonia.

More caution is exercised in using nitrate of soda for Barley than for any other crop, because it is so liable to prove hurtful to quality. It has been laid down by an able chemist that three-quarters cwt. of nitrate of soda per acre is the maximum quantity as a top-dressing for Barley. For Oats it may be used much more freely with advantage, also for mixed fodder crops, to which the scarcity and high price of hay during this and the two preceding winters should induce special attention. The best meadow hay in Leicestershire now costs about £6 per ton.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

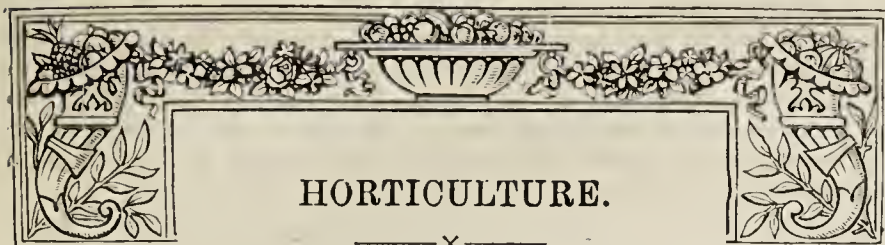
Lat.  $51^{\circ} 32' 40''$  N.; Long.  $0^{\circ} 8' 0''$  W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1893.  February.	Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.	
Sunday .. 12	29.701	35.5	34.5	S.W.	40.0	44.0	32.7	62.9	29.0	0.036
Monday .. 13	29.788	38.6	37.6	S.	38.6	49.0	33.0	61.6	29.6	0.053
Tuesday .. 14	29.367	43.8	47.4	S.W.	40.0	52.7	38.9	57.3	38.6	0.078
Wednesday 15	29.773	41.9	41.4	E.	40.2	49.2	34.9	52.9	27.2	0.069
Thursday .. 16	29.588	47.8	45.6	S.E.	40.5	49.9	41.3	66.9	37.0	0.026
Friday .. 17	30.005	37.1	36.2	W.	40.3	50.9	35.0	72.9	30.0	0.011
Saturday .. 18	30.080	50.3	48.9	S.W.	40.9	54.3	36.7	67.9	34.1	0.174
	29.757	42.9	41.7		40.1	50.0	36.1	63.2	32.2	0.447

### REMARKS.

- 12th.—Alternate cloud and sunshine till 3 P.M.; wet from 4 P.M. to 5.30 P.M.; fine night.  
 13th.—Drizzly early; overcast morning; frequent sunshine in afternoon; rainy or drizzly from 5.30 P.M.  
 14th.—Dull, drizzly, and mild morning; gleams of sun at 3.30 P.M.; wet from 4 P.M. to 5 P.M.; fair night.  
 15th.—Overcast and slightly foggy, with occasional drizzle, and heavy rain from 1 to 1.30 P.M.  
 16th.—Overcast with occasional drizzle in morning; generally sunny after 1 P.M.; a little drizzle at 5.45 P.M.  
 17th.—Sunny morning; generally cloudy in afternoon; rainy evening.  
 18th.—Overcast early; sunny at times after 11 A.M.; spots of rain in evening.  
 Another rather mild week, with frequent slight rain, but no heavy fall.—G. J. SYMONS.





It is well from time to time to note the position in which we stand and the prospects in that which interests us most; and as this, with us, and all of kindred tastes, is horticulture, we would fain see if this still holds its own in this our land of gardens. What better time for this than when Nature is awaking from its rest of winter under the influence of the sun, which, as Mr. Richard de Gallienne has said,

"Comes to meet us with his big warm hands."

But this is not so everywhere, at least just at present. The glow of a joyous day which

"Makes the birds sing  
And brings the buds again"

is all too quickly followed by southern rains and northern snows; but yet we look hopefully on. The snows will melt away and the floods depart, leaving the earth the richer, and the flowers and fruit will come to cheer us in due course.

What is horticulture? Garden culture, literally—making the earth bring forth its riches by the art of man. Riches? Is not the very word a mockery to those whose land has failed to yield the hoped-for increase? If it is, why should this be so? Look around, and the reason will reveal itself. Are we, as a nation of cultivators, doing justice to the land? Are we doing all that can be done in the rivalry of the world to keep ahead of our competitors? In horticulture, broadly speaking, we are; in agriculture the case is doubtful. What is the test? There is no better test than is afforded by the energy that is displayed in, and the character that is stamped on, our public exhibitions, both in London and the provinces. If the number of horticultural shows decided upon and proposed may be considered as indicating the general condition of horticulture in this country, then may it be considered as in an active, if not a flourishing, state.

There is not a doubt that the public interest in gardening is greater than ever it was before, and it is undeniable that at no period in history were there anything like the number of individuals sharing, some pleasurably, some profitably, some perhaps disappointingly, in horticultural pursuits, for there are various grades of workers. The good influences that gardens exert is universally admitted, and hence the efforts that are made for the acquisition of open spaces near towns, which by the gardener's art may be converted into beautiful places of resort for the populations; hence also the movement, which is gathering strength yearly, for the provision of gardens and allotments for all who may be able to make their lives brighter and better by their acquisition. And hence, again, the enormously increased number of exhibitions for affording opportunities for the display of flowers, fruit, and vegetables in the best form in which they can be represented by cultivators. All this denotes activity, and it is pleasing to observe the enthusiasm that exists in this direction. Nothing great or good has been achieved without enthusiasm when tempered with sober judgment and prudent action. There is plenty of enthusiasm now in the gardening ranks, and also, it may be added, plenty

of shows in store. In London there may be said to be a piling up of them looming in the distance, and not a few of those persons who are in a position to support those shows and make them successful from a spectacular point of view, are beginning to doubt the prudence of an undue multiplication of the number to which they are expected to contribute.

The meetings of the Royal Horticultural Society and the special exhibitions in association come fortnightly; then there are the two great general Shows of the Society. Added to these we have the established shows of the Royal Botanic Society and Crystal Palace, also the announcement of fortnightly Shows at Earl's Court during the season; and before these terminate the National Chrysanthemum Society steps in to give a foretaste of the brightness to follow in the autumn. It is to the crushing and crowding of summer shows, however, that is being regarded with some anxiety by persons who are expected to share in making them worthy of the name and nation. Still, though difficulties may be experienced in finding time and products for exhibition, these usually appear to be overcome when the moment arrives for action by those who desire to have their specialities represented in public. It is wonderful to see the magnitude of the resources of enterprising horticulturists as represented at the many shows both in London and the provinces. Is there a nation in the world able to provide so many and such large and varied horticultural displays over such a long period as our own country? And is there any country in which higher cultivation is displayed in so many aspects and with so many products—plants, flowers, fruits, and vegetables—as our own? Notwithstanding our shortcomings, we very much doubt if there is; and if there is, let the facts be known that sustain the proposition; then if we are behind we must make another effort.

The love of gardening is growing amongst us. The spirit of endeavour is more than ever animating our populations to do better than has been done before. Is the nation aroused to the need and the duty of strenuous effort towards excellence in production? If so, then will the wave of depression that so many feel is passing over us be a blessing in disguise. We utterly and absolutely decline to believe that we are destined to be left behind in the race for supremacy. Difficulties have been the opportunities of our race, as many a struggle by land and sea have shown; then why, if the inherent spirit of perseverance has enabled us to triumph in the dire necessity of destructiveness, why should not that same spirit, wisely guided, carry us on to the goal of success in the altogether more ennobling, though not equally appreciated, work of productiveness?

If every man would strive unceasingly to do the best that the best have done, then would a revolution be effected in the development of our resources—then would plenty, humanly speaking, supplant the poverty that many who are worthy have to endure—then would confidence be established and prosperity be restored, and the cloud that many feel rests heavily over our land eventually be removed.

A wholesome sign to a better and a brighter future is foreshadowed in the hold that horticulture is gaining on the people. Its force of attractiveness is recognised by those who are alert in bringing it into prominence for arresting the attention of the millions, and drawing them to the centres where they are sought to be. For this we are glad. We want to see the art made prominent and the greatest possible number take pleasure in it, because then will follow practice, and in this we hope to guide. In what way? Look around, scan diligently, examine closely, weigh carefully all that is said by some of the masters of the art of gardening in the *Journal of Horticulture*, for there we are impelled to believe, having faith in those who teach what they know to be true, that safe guidance may be found by those who seek knowledge in its pages.



## VINES AND VINE STOCKS.

MUCH matter that must have been interesting and instructive to practical men has recently appeared in your columns regarding the results of grafting certain varieties of Grapes on various stocks. To me the subject was very interesting, because for many years I have been experimenting in this matter. Perhaps, therefore, a few facts that have cropped up in my practice may be of interest to your able correspondents, as their experience and suggestions have been to me. I may in the first place say that I have come to the conclusion that, in course of time, the stock ceases to have any, or next to no influence, either for good or evil, on the scion unless a proportion of the stock be allowed to develop stem and leaves as well as the scion, and that if the development of the stock be rather more than that of the scion, the more pronounced will be the alteration produced.

About thirty years since I planted two Vines of Gros Guillaume at the warmest end of mid-season Black Hamburg vinery. The bunches produced by these were larger and looser than I care to see in any Grape. The colour, too, was not satisfactory. A branch of this variety was attached to one of the Black Hamburgs. The transformation was very marked in the more compact bunches, increased size of berry and jet blackness of colour, easily discernible on entering the vinery. One of the experts who saw them and said of them, "What fine Hamburgs" was the late Mr. Henderson, then gardener at Trentham. This Grape on the Hamburg was also much more fruitful than on its own roots when pruned closely.

In order not to unnecessarily burden your columns with a tedious story, I will pass over a variety of experiments and refer to some of more recent years. On entering on the charge of these gardens, which, as you know, are situated in a very wet, sunless climate, and in a most unfavourable situation—low, flat, and very damp—I experienced the greatest difficulty, not in growing Muscat of Alexandria Vines of great strength, nor in producing fine bunches that set well and went on satisfactorily up to a certain stage, but never finished, as I had been accustomed to produce this Grape in a drier climate, and with much more sunshine. At a certain stage the functions of the Vine ceased to a great extent and the foliage gave way prematurely. The border nor drainage could not be saddled with the defect. After battling without satisfactory improvement for many years, grafting on various stocks was resorted to. The stocks being chiefly Black Hamburg, Lady Downe's, and Gros Colman. It came out distinctly that some amelioration of the evil took place where no growth was allowed from the stocks except the scion. A marked improvement was gained only when a good proportion of the stock was allowed to grow as well as the scion. This result led to the inarching of Muscats on, in the first instance, Black Hamburgs, where two bearing rods were allowed to one of the Muscat. The produce from these Vines has been very satisfactory, although in the point of temperature I had to make a compromise. The Muscat rods have continued for eight years to produce very fine bunches, have set exceptionally well, and retained their foliage in good order to the last, and finished the fruit very well indeed. In another house devoted chiefly to Gros Colman and a few Muscats, a Muscat rod has been attached to a Colman with two rods, and the difference in the produce has been very marked in the case of the Muscats. This latter is a better arrangement, as the Colman rejoices in a high temperature, and also requires it for a long season to make it worth growing as far as flavour is concerned.

These two cases led me in 1891 to work several Muscats on a strong, healthy Gros Colman in another house, and the Muscats produced on these grafts last year were remarked by all who watched them to be a great improvement to any previously grown in this house on their own roots. In this case the Muscat grafts are put on half-way up the roof, and so the bottom half of the canes are Gros Colman, and the upper half Muscats. This season will develop the experiment more fully, though judging from some very weakly "shows" that under ordinary circumstances would not have been left, I have no doubt as to the results. Such tiny bunches set very well, and developed into compact bunches of large and well-finished berries. This is the house in which I tried all other remedies I could think of unsuccessfully, while the Muscats were on its own bottom. Raisin de Calabria, managed in this way as a stock, has also produced much-improved Muscats, and I have no doubt that any hardy strong-growing stock would greatly improve them under similar conditions. Such hardy Vines in an indifferent climate retain their foliage later in the season than Muscats on their own roots do, and I have proved beyond any doubt that the limb of Muscat attached shares in the correspondingly extended season of root activity.

One of your correspondents has lately related how he found Gros Colman much improved in flavour when grafted on the

Muscat. I do not say that his deduction is incorrect, but may the improved flavour not be credited, in part at least, if not altogether, to the Muscat temperature and long season's firing? I have had a limb of Gros Colman on Muscat roots, and a limb of the Muscat in bearing from the same roots. The produce of the Gros Colman in this case never coloured well, nor was the flavour better than in the same variety on its own roots in the same house, and the berries were almost jet black long before the Colmans on Muscat roots were half coloured. My own experience is that Gros Colman is good or bad in flavour in proportion as it gets a long season of high temperature.—D. THOMSON, *Drumlanrig*.

## TASTEFUL GARDENING.

WHAT is tasteful gardening? It is the touch of art applied so skilfully to Nature that a picture is evolved (often many pictures) which gives pleasure to all who see it. Even the mere superficial observer regards it with pleasurable emotions, paying involuntary homage to the impress of harmony and beauty which it bears, without any thought of how the effect is produced. It is to the higher intelligence, refined taste, and deeper culture of the more sensitive artistic temperament that it appeals with a force of meaning—a power of expression, which exalts it to a level with the highest works of art, and which it is the peculiar privilege of the true artist to appreciate fully. This latter is by far the more uncommon feeling, and that is precisely why the vulgarity of fanciful display is so common, the expression of good taste so rare. By this reasoning it is not intended to insist upon a quietness of tone at all insipid; far from it. Individuality, and the most striking contrasts, are all the more effective in combination with the repose which imparts dignity if they are not mere freaks of fancy or of fashion.

Taking some examples we may turn first to a rockery. When in harmony with its surroundings it is a feature of prime importance, always attractive, always growing in interest, whether it is on a large or small scale. When plenty of large masses of rock can be had, and the surroundings of the site are expansive, then the aim is to impart the effect of a natural outcrop of rock, very much broken it may be, yet always having the effect of regular strata, even when huge masses stand out singly. This is not at all difficult if only attention is given to stratification, however irregular in outline, and to placing every stone upon its natural bed, never allowing one of them to be set on end. The planting of such a rockery must have equally bold treatment. The tapering forms of Conifers, the pendant growth of the Silver Birch and Mountain Ash, the more compact forms of Holly, Berberis, Box, Tree Ivy, and Laurustinus are all in keeping; so, too, are Yucca, Pampas Grass, Phormium tenax, Arundo, and certain flowering shrubs. Of trailers only those of vigorous growth and striking characteristics are admissible, such as Ivy, Clematis, Cotoneaster, Escallonia, and Virginian Creeper.

On a smaller scale or in a more confined space the strata may be continuous without severe formality, avoiding the effect of or the broken joints of masonry, but having natural fissures, ledges, pockets, and nooks for alpine plants. The number and thickness of strata, form and extent of the rockery, must depend upon the available materials, the position, and its surroundings. The two most important points are natural effect and the provision of suitable places for the planting—neither of them such simple matters as they seem. It must be attractive without being obtrusive, an adjunct, a subordinate feature, of quiet tone, in perfect harmony with everything near it, really ornamental as a whole, and so rich in alpine growth as to well reward one for the close inspection which it invites.

Rock beds and borders, too, are, when well arranged and skilfully managed, very attractive, both by the exquisite beauty of form in miniature of the plants, and the novelty and change which some of them present throughout the year. Natural outcrop is the key to the successful treatment of them; portions of strata protruding out of the soil with the rock always on its natural bed. Very seldom indeed is this well done. The conception which the ordinary maker of suburban gardens has of such work is either a chaotic stone heap, or long rows of stones set on end. He altogether ignores strata or natural formation; refinement, harmonious contrast, and repose affect him not. His aim is novel, even startling effects. He is undoubtedly successful, for his mountain peaks in the guise of long pieces of stone set on end, often cocked up on a mound of earth, present themselves at every turn, and presumably gratify their proud possessor. Nor are such freaks of fancy confined to suburban gardens. They may be met with upon a much larger scale in certain public parks and gardens, where they certainly answer to the description of chaotic stone heaps. For obvious reasons one cannot point to any one of them in particular;



but to the student, or others desirous of studying really tasteful artificial rockwork, mention may be made of that in Battersea Park as one of the finest examples we have in a public garden; and in a private garden the magnificent rockery at Osmaston Manor near Derby. Both are upon a scale beyond ordinary requirements, and one regrets the rarity of really artistic rockeries and rock beds upon a small scale.

Taking next shrubby groups and belts, it is desirable to call attention to the monotonous effect of evergreens. At one time very many gardens were crowded with common Laurels. They have very generally been swept away to make room for Conifers, which have justly become so widely popular. But elegant in form, as Conifers undoubtedly are, they gain much in effect when tastefully associated with such deciduous growth as Silver Birch, Purple Plum, Mountain Ash, Purple Beech, Maples, Laburnum, and the best flowering shrubs. Under skilful arrangement all heaviness is avoided, brightness and beauty are the dominant features, the formality of a nursery show border is not present simply because of the judicious massing of colour and form which gives such scope to the artist, and enables him to impart distinct features to different parts of a garden. He especially avoids in grouping anything like a plantation, formality only being allowed in the straight lines of an avenue, yet a group of Cupressus Lawsoniana or Thuja gigantea on a steep slope may be rendered very effective, as also may other distinct groups of Birch, Holly, Larch, Mountain Ash, and many other things.

Mixed planting, too, plays an important part, and may be rendered very effective. Take, for example, a lawn group of tall columns or cones of green; the effect is stately, and it becomes decidedly pleasing by the addition of a marginal belt of flowering shrubs. There can be no objection to occasional masses consisting solely of Conifers or Holly, and single specimens may often be so placed as to impart brightness and beauty to a scene that was tame and insipid without them. For example, a group of the common Holly in the angle of a building, though healthy and flourishing, was so heavy that I was asked if anything could be done to relieve it. Certainly! Plant a Pampas Grass in front, well away from it and opposite the centre; plant in it such deep, rich, well-drained soil that fine spikes are a certainty, and every summer and autumn, while the plumes are in full beauty, the effect will be most striking, the Holly forming a foil and setting of deep green for the silvery plumes of the most beautiful of all Grasses. I know nothing among hardy ornamental plants that repays one better than it does for a carefully prepared station. Planted in ordinary soil without special care it will give spikes 4 or 5 feet high; but planted out as suggested in very deep rich soil the plant grows to an enormous size, and the spikes spring up to a height of 10 or 12 feet. Or, to take another example, a bed or group of beds was required for a turf plat visible from some of the house windows. Beds for ordinary bedding plants were suggested; but there was a flower garden near, and the advice given was to have a central specimen of Berberis Darwini with four rock beds around it, but well away from it. The rock beds had the stones arranged as has been indicated, and the planting consisted of compact growing and dwarf sorts of Heath, dwarf Kalmias, Andromedas, Gentians, Cyclamens, Primulas, Irises, Campanulas, various bulbs, and some Sedums, Sempervivums, and other alpine. The rocky masses were not obtrusive even at first, and as in due course they became partly concealed by cushions of various shades of green and grey, mingled with the bright pink masses of that most useful of hardy Heaths, Erica carnea, the effect was charming. The eye was never offended, as it is wont to be, by the bare aspect of ordinary flower beds in winter. The beds were always clothed, they became increasingly attractive year by year, and the Berberis grew into a huge, rounded mass of glossy green, enriched every spring by the deep rich yellow blossom.

I might go on to enumerate many other examples of features rich and rare in gardens, but the object of this article was to utter a protest against the growing predominance of fanciful display in gardens; of the introduction of features essentially vulgar, and of the sacrifice of good taste to a craving for startling effect.—EDWARD LUCKHURST.

### MILDEW.

AMONG the difficult and multifarious duties of a gardener's daily life is the constant warfare he has to wage in one way or another against the many garden enemies which are ever ready to attack him on all sides almost every day throughout the year, and I think of all the enemies he has to contend against perhaps mildew is the most insidious and destructive. As I am a believer in prevention rather than in cure, I will endeavour to show how through good cultivation it is possible to keep mildew at bay; but

I will first refer to the cure of mildew, and to illustrate my meaning on this point I may be allowed to relate an incident in my experience, which happened in the spring of 1870.

The previous December I had been appointed head gardener at Drayton Manor, and under my charge was a large late vinery, and a good crop of Grapes in the house was a most important consideration to meet the heavy demands for numerous shooting parties in the autumn. The Vines started and apparently went on all right until early in the month of May, immediately after which time (just as the berries had finished setting) I was horrified to find that half the Vines were badly affected with mildew, and especially the young berries, which were literally coated over with it. Being then young and new to my charge this disaster seemed to overwhelm and stagger me, and I felt within myself that my career as a head gardener had suddenly and for ever come to a close, as I expected nothing less than that my then generous and kind-hearted employer would say that this failure in the Grape crop clearly pointed out to my utter incapacity as a gardener. However, I soon overcame this feeling, and knowing from previous experience the efficacy of sulphur in the destruction of mildew, I at once decided to resort to this remedy, and being at the same time apprehensive that other parts of the Vines not then visibly mildewed might be affected I decided to apply a drastic remedy.

In the afternoon of the same day I had the Vines thoroughly saturated with rain water, and whilst they were in this condition I dredged every portion of the fruit, leaves (both under and above), and stems with flowers of sulphur, and left them in this condition until the following morning, when every particle of the sulphur was carefully washed away. I may say here that before that application of the sulphur in the afternoon until it was all washed off early the next morning the pipes were kept at a good heat, but not enough to cause fumes to emit from the sulphur.

Of course I am well aware that there is nothing new in the application of sulphur for the destruction of mildew, but many are timid in the liberal application of it in the way I have described, that I write to make it perfectly clear, to young readers more particularly, that sulphur may be liberally applied in the way I have described with perfect immunity from harm or danger; but here let me say that overheating of the pipes must be guarded against or the consequences will be fatal.

Now as to the result of the heavy sulphuring which, as you may imagine, was watched by me with much anxiety for many days. The cure as far as killing the mildew was perfect, and my feelings afterwards I remember were something akin to a boy's feelings at school when he has given another boy a good licking—a feeling which all old boys must remember—I felt that I had come off victor. I have much to thank for that experience, as mildew and I have often met since, and the old remedy remains as powerful as ever.

At the beginning of this paper I stated that I believed prevention to be better than cure, and this mildew visitation troubled me a good deal afterwards, attacking the Vines at the time it did, when they were under a great strain for a period—viz., in forming their berries, I decided there must have been something wrong at the roots, and in the following autumn I had them lifted within 2 feet of their stems and replanted in a new compost. I had the charge of these Vines for nine years afterwards, and no Vines could flourish better than they did during this time, and no trace of mildew was seen on them again.

More recently I have had Peaches to deal with badly affected in the same way, and the cure and prevention have been equally effective. The experience of many of our best practitioners may be quoted in opposition to my views on the causes and cure of mildew, and I only give you my experience for what it is worth, and I say again that a thorough application of the flowers of sulphur will destroy mildew, and I further say that a proper and generous cultivation of the roots of trees and plants will effectually protect them from its visitation.—O. THOMAS, *Royal Gardens, Windsor*.

### FERNS.

WHEN in a healthy and flourishing condition all Ferns, whether stove, greenhouse, or British, are beautiful and interesting, and well repay that attention which is necessary to obtain the best results. So varied are they in size, habit, and form that they lend themselves to be cultivated successfully under various methods, and while nearly all species and varieties succeed well under pot culture, many of them would do much better, and be more in character with the habit and general requirement of the plant, if grown in baskets or planted out. Grown thus they would, when once established, last many years, and give far less trouble.

Where proper arrangements can be made with suitable surroundings undoubtedly Ferns planted out flourish best and certainly look



more natural. For instance, one good *Dicksonia* or any other of the handsome Tree Ferns planted in the centre of a conservatory or Palm house, and encouraged to develop its huge fronds in a natural way, with a good carpet of *Selaginella* growing up to its trunk, would form a more pleasing feature than a dozen plants huddled together in pots and tubs.

Again, there are other Ferns most unsuitable for pot culture owing to their natural drooping character, but which are invaluable for baskets or overhanging rocks. Among these especially may be named the *Woodwardias* and *Goniophlebiums*, the latter requiring a higher temperature than the former to see it at its best. In the fernery here the *Woodwardias* are a grand sight; hanging over the rocks many feet, and reproducing themselves as they do from the tips of the matured fronds, is both interesting and curious. I believe it possible to have this valuable Fern in a healthy condition, reaching as much as 20 feet. To accomplish this the plants should be placed in baskets or planted near rocks overhanging water, and the foliage kept in an almost dripping state, or thrips, the great enemy of most Ferns, would soon attack the old foliage and destroy the beauty and true character of the plant. Most of the *Davallias*, too, are very suitable for rocks and baskets, their creeping rhizomes producing the most beautiful fronds, and which last a long time in a cut state. Many others could be named which are more suitable for baskets than pots. I would strongly advise those who have not succeeded as well as they would wish with that lovely Fern, *Adiantum farleyense*, to try it in baskets. I find it does much better and lasts many years without any trouble. To disturb the roots when well established is a great mistake; rather assist them during the growing season with a little artificial manure once or twice a week, and top-dress them with fibrous loam, if this can be done without injury to the young fronds. The same can be said of that most useful Fern, *A. cuneatum*. Baskets made up of this two years ago are now perfect globes of fronds 4 feet through, and which never fail to attract attention.

In selecting baskets for Ferns reject all ornamentation of wire-work. Let them be as plain as possible, but strong; the object in view should be a mass of healthy foliage, completely hiding the basket. I find the best baskets are those of a round or half globe shape. This allows the light to act on a larger surface than is the case with those with broad, flat bottoms. In making these up the best results are obtained by using one variety of Fern only in each basket. When several varieties are mixed together they soon form a mass, the stronger smothering the weaker, and resulting in an unsightly object.

At the present season, before growth is too far advanced, all Ferns should be overhauled, cutting away all old fronds which keep light and air from those that are pushing up. It may not be found necessary to disturb many of them, but it is very essential to know that the drainage is perfect, and though Ferns require a great amount of water, like other plants, they quickly resent it in a stagnant form.

Most Ferns enjoy peat, but it is a mistake to think they will not succeed without it. There are very few varieties which do not enjoy fibrous loam and leaf mould with coarse sand and charcoal added. *Adiantums* especially do better in a mixture of this kind than in peat alone. All Ferns enjoy an atmosphere charged with moisture. This being so, it is decidedly wrong to ventilate too freely, or in such a way as to cause a rush of air through the house. Where proper ventilation is provided at the top of the building this will be found sufficient, and seldom will it be necessary to add any at the bottom.

In establishments where much cut-flower work is carried on a plentiful supply of Fern fronds is indispensable. This demand should be met by growing several batches of plants in pots of the most useful kinds, chiefly *Adiantums* and *Pteris*. This can easily be done in the fruit houses, especially in vineries where they enjoy the shade from the foliage above. By this means the beauty of the fernery is not destroyed by repeated cutting.—RICHARD PARKER, *Impney*.

[No one can visit the beautiful under-glass fernery at Impney, with its bold rocks, charming vistas, pleasing water scenes, and luxurious Tree and scandent Ferns, without recognising the taste and cultural skill displayed by our correspondent.]

## PACKING GARDEN PRODUCE.

ANOTHER London season has commenced, and doubtless in more than one case the consignment of produce from the country garden to the town house will have begun. However, some time will elapse until this becomes, generally, a part of routine garden work. In the meantime, an account of my manner of packing may, I trust, be helpful. My experience is that the demand for flowers

is almost insatiable. A grower, producing largely for Covent Garden, lately told me that this market is at once the dearest and the cheapest mart of the kind in the world. Good produce, in demand and scarce, invariably sells at a high rate, while a plentiful supply makes low prices. But against this my ladies have often told me that the particular items they require, especially flowers, never fall to a price that they could with truth term inexpensive. So the old garden in the country is called upon to bear the brunt of the season.

It has been dawning on the minds of gardeners that the ways and methods of the growers for market are worth attention. For example, the market gardener does not put his merchandise in large or in heavy packages, but always in sizes that are easy to handle. Gardeners, on the other hand, are addicted to a practice of consigning in one bulky hamper, unmindful that the porters and carriers through whose hands it must pass will, naturally, exhibit less care in handling a heavy and unwieldy hamper than in those that are compact and easy to move. I believe there are to-day packers who still put together into one hamper the vegetables, fruit, and flowers of each consignment, and this, no doubt, on the double score of saving trouble and lessening expense. This, however, is a mistake. A number of light, handy parcels are in every way easier to manage than a heavy one, and the cost of transit is no more. But it must be admitted that market growers are in a position to carry out the system in a manner impossible for private gardeners to imitate. The latter are obliged to put small packages of various vegetables, or of other garden produce, into one hamper. While, however, that is so, it is nevertheless a simple matter to select and pack the heavier and coarser vegetables together, those that are light or fragile being put separately.

The hampers I use for vegetables, also for flowers, are those employed by continental firms for the transmission of Lettuces and of fruit during the winter. The hampers are of two sizes, the larger of which measures 24 by 16 by 9 inches and the smaller 18 by 12 by 6 inches. The former is the more useful, the latter being employed for carrying fruit, and only occasionally flowers. These hampers cost 1s. each, and they last three years. For the best flowers, such as Orchids, small boxes are used. These cost 1d. to 2d. each, and are bought at a store in the neighbourhood. For long-stemmed flowers boxes are specially made. These are 4 feet in length, 11 inches wide, and 4 inches deep. Square punnets, costing 6s. 6d. per gross, I fill with Mushrooms, Tomatoes, and with small fruits. They are, of course, packed for transit in one of the larger hampers. The only other material of importance is paper. This is of two qualities; a light make like tissue paper costing 3s. per ream, and in this we pack the best flowers. The other paper is of a much heavier quality, costs 5s. per ream, and is used for packing both flowers and fruit. Small string, as well as twine of moderate strength, is required for fastening both hampers and boxes. Nails are on no account used to secure the latter, but only string. Even when, as occasionally happens, two or more boxes are sent as one parcel, they are not separately fastened, but tied together. This method, which gives a security which practically is complete, is commendable on account of the saving to the boxes as well as because it facilitates packing and unpacking.

In the manner of gathering the various vegetables and out-of-door fruit there is a right and a wrong way. It is inadvisable to set several men to this work. Generally, one man is capable of overtaking it, but if more are necessary, allot to one man the task of gathering vegetables, and to the other fruit. There will thus be no overlapping, no standing in each other's way. Again, always set the same men to the same work; it is done more expeditiously, and better, and the gardener is saved much worry. I make it my special duty to gather flowers and hothouse fruits. I also superintend the packing of vegetables, and invariably pack flowers and fruit myself.

As the garden is, by road and rail, about twelve hours distant from the London house, care is required to forward at the right time and in the right way. We arrange at the beginning of each season for a low through rate, by express. The difference amounts to 1d. per pound, but as the ordinary rate is 2d., it will be seen that exactly 100 per cent. is saved. In the course of a "season" freight charges amount to several pounds. From our station many parcels can be sent as one, but from London each separate empty is charged at the same rate as a half cwt. I have also found that small parcels up to a certain weight, as a rule, are sent more cheaply and expeditiously by train than by parcel post. Flowers, vegetables, and fruit are gathered early in the morning of the day for forwarding, packed in the forenoon, and during the afternoon the hampers are sent to the station to be consigned direct to London by night express, and they are delivered early in the morning at their destination.—R. P. B.

(To be continued.)





## ODONTOGLOSSUM PULCHELLUM.

A SPECIMEN of this pretty *Odontoglossum* has been flowering in the cool Orchid house at Kew for some time past. The spike is erect, about a foot in height, and bears ten or twelve flowers; it has a strong resemblance to Lily of the Valley. The flowers are pure white except for a yellow crest, and are very fragrant; they are smaller than the majority of *Odontoglossums*. The narrow grassy leaves are of a dark green colour, and are produced in pairs on the long thin pseudo-bulbs. This species is a native of Guatemala, from whence it was introduced about 1840. It is essentially a cool-house plant.

## ANGRÆCUM FASTUOSUM.

This distinct little *Angræcum* has not as yet become very plentiful. It has only been in cultivation for a few years, having been introduced from Madagascar by Messrs. Sander in 1881. It is of very dwarf habit, the stems being only about a couple of inches in height. The leaves are oblong, 2 or 3 inches broad, and of a leathery texture. The flowers are very pure white and deliciously fragrant. They are about  $1\frac{1}{2}$  inch in diameter, and are borne two to four on a short raceme. A plant is now flowering at Kew.—A. B.

## CÆLOGYNE FLACCIDA.

THE interesting note on page 153 regarding this Orchid was well timed, for although not seen so often as it deserves, there are few Orchids so easy to cultivate, or more beautiful in appearance, when a fine specimen is seen in flower. An intermediate house is the most suitable place for it, and I would strongly recommend baskets in preference to pots or pans, as then the racemes of flower can be seen to advantage. Some lumpy peat, living sphagnum moss, and plenty of water during the growing season, are all that is required to produce good pseudo-bulbs, which, with a season of rest after growth is completed, will reward the cultivator for all his trouble. We have a good plant in flower in a basket, and if wanted to last in flower over a long period, it will bear removal to cooler quarters without any apparent detriment.—R. P. R.

## CATTLEYA PERCIVALIANA.

"H. W. W." (page 129) does well to call attention to this useful *Cattleya*, one of the most beautiful of the "labiate" section. We have several plants in flower now, some equal to *C. Trianae* in size, while far surpassing that popular species in richness of colouring. I have enclosed a flower of a pretty form, not so large as some we have, but beautifully marked. This *Cattleya*, in common with *C. Lawrenceana* and *C. superba*, will stand a greater amount of sunlight than most others, and if grown in a clear light and an average temperature it is very free flowering."—H. R. R.

## CYPRIPEDIUM JOHNSONIANUM.

THIS hybrid *Cypripedium* is the result of a cross between *C. nitens* and *C. Lawrenceanum*, and is an exceedingly pretty variety. When exhibited by Messrs. F. Sander and Co., St. Albans, at the Drill Hall, on December 13th last year, the Orchid Committee of the Royal Horticultural Society deemed it worthy of an award of merit. The lip and petals are of a burnished purple. The lower area of the dorsal sepal is deep green, the upper portions and edges

pure white, lines of purple dots running from top to bottom. Fig. 30 represents a flower of this interesting *Cypripedium*.

## FINE CÆLOGYNES.

Two specially fine clumps of *Cælogynes* are at The Briars, Reigate. They comprise *cristata* and *cristata Lemonei*, the latter much the purest and best. These clumps are each some 4 feet over, in superb health, and covered with spikes of bloom. They are in pans 26 inches in diameter. *Cælogyne cristata Lemonei* has smoother or more perfectly formed flowers than has *cristata*, that are not only purer in colour, but have rich orange yellow throats or lips that present a most pleasing contrast to the snow whiteness of the rest of the bloom. More beautiful Orchids for the furnishing of sprays, or single blooms for buttonholes can hardly be conceived. These *Cælogynes* bloom so readily in the winter under the influence of gentle warmth, that their floral value can hardly be over-estimated.—D.

## CATTLEYA WARSCEWICZI AUTUMNALIS.

*CATTLEYA WARSCEWICZI* (or *C. gigas*, as it was afterwards called) is well known to be a summer flowerer—that is, its blooms are produced on the young growths, without an interval of rest. A plant in the collection of Mr. F. L. Ames of North Easton, Mass., U.S.A., has for several years in succession flowered in November and December, which gives it an enhanced value for decorative purposes. After the growths are matured the plant rests for a considerable period, as in the case of *C. labiata*. This plant was introduced by Messrs. Hugh Low & Co. of Clapton, and was purchased as an imported *C. Mendeli*. Its characteristics are noted in *Garden and Forest* for 1890, p. 114.

It is interesting to record that a second plant has now appeared in the collection of W. G. Marshall, Esq., Norton Manor, Taunton, Somerset, where it flowered in December last. It is a magnificent



FIG. 30.—CYPRIPEDIUM JOHNSONIANUM.

thing, the petals 4 inches long by  $3\frac{1}{2}$  broad, and, as well as the sepals, of a light rosy mauve. The front lobe of the lip is of the richest crimson-purple, with a light rosy mauve margin. In the throat are two large straw-coloured blotches, which are yellow on the side







The copper sulphate was dissolved in a quart of water, and the calcium chloride was treated in the same way. The two solutions were then poured together and enough water added to make 5 gallons.

2.—A comparison of two fungicides containing no copper with those given under question 1. The fungicides used in this case were :

9.—POTASSIUM SULPHIDE SOLUTION.

Potassium sulphide	..	..	..	..	..	..	..	..	1 oz.
Water..	..	..	..	..	..	..	..	..	5 gallons

The potassium sulphide was added to the full quantity of water and then stirred until it was dissolved.

10.—SODIUM HYPOSULPHITE SOLUTION.

Sodium hyposulphite	..	..	..	..	..	..	..	..	1 oz.
Water..	..	..	..	..	..	..	..	..	5 gallons

This was prepared the same as No. 9.

3.—A comparison of Bordeaux mixture, full strength, with the same preparation half strength.

BORDEAUX MIXTURE, FULL STRENGTH.

Copper sulphate	..	..	..	..	..	..	..	..	6 lbs.
Lime (unslacked)	..	..	..	..	..	..	..	..	4 lbs.
Water..	..	..	..	..	..	..	..	..	22 gallons

BORDEAUX MIXTURE, HALF STRENGTH.

Copper sulphate	..	..	..	..	..	..	..	..	3 lbs.
Lime (unslacked)	..	..	..	..	..	..	..	..	2 lbs.
Water..	..	..	..	..	..	..	..	..	22 gallons

4.—A comparison of the Bordeaux mixture, full and half applied early and late. By early treatment is meant that two applications were made before the fruit set. By late, that treatment was postponed until the berries were the size of bird shot.

5.—A comparison of six treatments, using Bordeaux mixture, full and half strength, with four treatments, both beginning at the same time, *i.e.*, when the leaves were first starting."

Two vineyards were devoted to the experiments : (1) for trial of the ten fungicides, and (2) for the Bordeaux mixture at full and half strength. The treatments, six in number, in every case were made on the same day, the date for each being as follows :—

(1) April 27th (Vines just beginning to grow) ; (2) May 13th ; (3) May 25th ; (4) June 9th (foliage nearly full grown, fruit the size of bird shot) ; (5th) June 22nd (Vines growing vigorously) ; and (6) July 7th.

As regards preventives against black rot, the various preparations stand as follows :—

	Per cent.
I. Copper saccharate, glue mixture ..	100
II. Bordeaux mixture, ammoniacal solution, modified eau celeste ..	99
III. Copper acetate solution, copper chloride mixture, potassium sulphide solution ..	96
IV. Precipitated carbonate of copper solution ..	90
V. Sodium hyposulphite solution ..	70

Nothing further was done in the vineyard until September 1st, when all the Vines were carefully examined and observations made on several points, some of which have interest for growers in this country and its colonies, especially those relating to the injury to the foliage and wood by the treatments, which are set forth in an excellent diagram herewith reproduced.

DIAGRAM 1.—Showing the average condition of the foliage and wood September 17th of the treated plats with respect to injury from the spraying. (Black indicates injury.)



FIG. 31.—DIAGRAM 1.

EXPLANATION OF DIAGRAM 1.—(1) Bordeaux mixture ; (2) Copper acetate solution ; (3) Copper chloride solution ; (4) Ammoniacal solution of copper carbonate ; (5) Precipitated carbonate of copper solution ; (6) Potassium sulphide ; (7) Sodium hyposulphite ; (8) Modified eau celeste ; (9) Glue mixture ; (10) Copper saccharate.

The above diagram illustrates better than many words the damage or otherwise of the treatments, but the benefits are given in tabular form ; therefore, to elucidate the results of the experiments, I have prepared

the following diagram, which shows at a glance the per-centage of perfect clusters of Grapes due to the several treatments, the mean per-centage of perfect bunches on the untreated, also the lowest per-centage of perfect bunches on the untreated Vines, and the maximum.

DIAGRAM 2.—Showing kind of treatment and per-centage of perfect clusters on September 17th. (White indicates perfect clusters.)



FIG. 32.—DIAGRAM 2.

EXPLANATION OF DIAGRAM 2.

	Per cent.
(1) Glue mixture..	100'00
(2) Modified eau celeste, copper saccharate, Bordeaux mixture, copper chloride mixture..	98'00
(3) Potassium sulphide solution ..	95'17
(4) Ammoniacal solution ..	91'32
(5) Copper acetate ..	90'47
(6) Precipitated carbonate of copper solution ..	86'47
(7) Sodium hyposulphite solution ..	40'78
(8) Average perfect clusters on untreated Vines ..	41'37
(9) Lowest ..	15'95
(10) Highest ..	68'00

The results of treating Vines with Bordeaux mixture at full and half strength are given below, in per-centages of efficacy :—

	Per cent.
" Bordeaux mixture, full strength, early, six sprayings ..	94'00
" " half " " four " ..	93'90
" " full " " four " ..	90'00
" " full " " late three " ..	89'00
" " half " " " " ..	23'00
" " half " " " " ..	16'00"

CONCLUSIONS.—“(1) With the exception of the Bordeaux mixture all of the fungicides used . . . more or less injured both leaves and fruit ; (2) Taking cost, ease of preparation and application, effect on foliage and fruit, and all other questions into consideration, the Bordeaux mixture, even though reduced to less than one-sixth the usual strength, proved the most effectual remedy ; (3) Vines treated with Bordeaux mixture, half strength, gave practically as good results as the same preparation full strength ; (4) In every case early treatment gave decidedly better results than late ones ; (5) Six treatments, the last two after the Grapes were practically grown, gave better results than four, the last being made when the berries were the size of bird-shot.”—G. ABBEY.

[The above record is interesting and suggestive, but in this country both Tomatoes under glass and Potatoes in fields have been injured by the “full strength” Bordeaux mixture, and a preparation of equal parts of sulphate of copper and lime have proved more satisfactory.]

GARDENERS' ASSOCIATIONS AND SITUATIONS.

I THINK “D,” in the paragraph under the above heading, page 135, touches a subject of considerable importance to gardeners, and one well worthy of discussion ; for I am of the opinion that gardeners' associations and horticultural societies do not accomplish all that they might in being of practical assistance to gardeners in time of need, nor yet in keeping up the status of the profession in these days of horticultural progress.

Why should not the Royal Horticultural Society, which is still lamenting a lack of support, and other kindred societies be of more practical benefit to gardeners, and why should not employers when wanting gardeners obtain them through these societies ?

I see the Council of the R.H.S. are fostering an idea for the making or training of gardeners. Will they also promote a scheme so as to be of assistance to gardeners when out of situations ? I take it that if the R.H.S. would undertake the recommendation of gardeners of proved abilities and character they would get a much larger share of their support than at present, and employers of gardeners might also be expected to associate themselves with the Society.—A, Yorks.



## SILVER MEDAL ESSAY.

## MANURES AND THEIR USES.

By Mr. G. A. BISHOP, *The Gardens, Wightwick Manor, Wolverhampton.*  
(Continued from page 151.)

## MANAGEMENT OF MANURE HEAPS.

THE animals should have sufficient litter to absorb the whole of the urine, which contains most of the nitrogen produced; but only this quantity of litter, any excess being objectionable. Another matter of importance is the thorough mixing of the various kinds of manure. On no account should horse manure be allowed to accumulate by itself, but it ought to be mixed with the cooler refuse of the cow and pig.

When the manure is removed from the stables, pigstyes, and cowsheds, it should be placed under cover. A good covered bin is a valuable adjunct to a farm or stable; the manure should be stored there, and frequently watered with the liquid that drains from the buildings and yards provided it is not diluted with rain or surface water.

Rain washes out much of the valuable constituents, therefore down spouts and drains should not be allowed to carry water into places where manure is stored. Where a large number of cattle are kept a good covered-in yard should be a reality, then all the litter from the stables and sheds can be placed in the yard to be well trodden down.

In order to prevent loss of ammonia by drainage and evaporation powdered gypsum may be used to fix it, sprinkling the powder on the floors of stables, over manure heaps, or in yards where manure is being trodden down. The ammonia displaces the calcium from the calcium sulphate (gypsum) and forms ammonium sulphate. Lime should on no account be employed, as it will liberate and drive off the ammonia. Kainit as containing 12 per cent. of potash is a good addition to the manure. As the manure accumulates it will probably have to be stacked out. This should be done if possible in frosty weather, when the ground is hard, a clay foundation should be chosen, and a few inches of peat, Potato haulm, or weeds and rubbish laid upon it, to absorb moisture. On this the manure is placed, forming a heap about 5 feet high, made as compact as possible, trimming it and covering with about 6 inches of soil, the top being rounded to throw off the rain.

## COMPOSITION OF FARMYARD MANURE.

	Fresh.	Partially decayed.	Much decayed.
Water ..	70.00 ..	70.00 ..	79.00 ..
Organic matter ..	24.60 ..	19.20 ..	14.50 ..
Ash ..	4.40 ..	5.80 ..	6.50 ..
Potash ..	0.52 ..	0.63 ..	0.50 ..
Soda ..	0.15 ..	0.19 ..	0.13 ..
Lime ..	0.57 ..	0.70 ..	0.88 ..
Magnesia ..	0.14 ..	0.18 ..	0.18 ..
Phosphor's pentoxid ..	0.21 ..	0.26 ..	0.36 ..
Sulphuric acid ..	0.12 ..	0.16 ..	0.13 ..
Chlorine ..	0.15 ..	0.19 ..	0.16 ..
Silica ..	1.25 ..	1.68 ..	1.70 ..
Nitrogen ..	0.45 ..	0.50 ..	0.58 ..

The above (rather a poor sample) will show the change manure undergoes during fermentation. Some of the organic matter disappears, while the water, ash, nitrogen, and phosphorus pentoxide increase.

## MANURE FOR FRUIT CROPS.

Fruit trees which have been long in bearing require more attention than they usually receive, particularly as regards their food. If they are grown in orchards the fruit is gathered and taken away, the leaves fall and are usually blown away by the wind, the grass growing beneath is often cut and made into litter or carried away green without a thought on the part of the cultivator that some provision should be made to return most or all of the elements contained in the grass, fruit, and leaves to the soil surrounding the trees. Vegetables will not succeed year after year without the ground being enriched with manure in some form. How, then, can it be expected that a fruit tree will continue satisfactorily productive in impoverished soil? A judicious use of phosphatic, nitrogenous, and potassic manures will return these elements to the soil which have been abstracted from it.

If old trees are in a bad state of health, the first thing the gardener ought to do is to learn the cause; if the roots are in the subsoil they must be pruned before feeding, because after root-pruning new fibres issue from the smoothly cut ends, and these fibres will be able to make use of the food applied to the ground. If the trees are in a bad state and the roots are not in the subsoil the cause must be looked for elsewhere. Parasites may be causing the damage, or pruning may be at fault, but more often poorness of soil will be responsible. In this case the soil must be considered, its nature and physical condition known and suitable manures applied.

Prepared farmyard manure used as a top-dressing will supply all that is necessary, particularly if it is prepared under cover and drenched with liquid manure, and also dressed with kainit or gypsum to retain the ammonia.

Liquid manure applied to orchard fruit trees in winter, and also in summer, will supply most that is required for good growth, fruiting, and a healthy condition throughout. Where the leaves do not blow away, the grass is eaten off, and mulching is done, a dressing of lime will have good results by decomposing the nitrogenous matter, so that the rain can wash this down to the roots.

If stand pipes can be placed convenient to fruit trees and connected with force pumps in cesspools, so that a hose may be attached for watering the trees, the return will be found to pay for the outlay. Liquid made from chemical manure may be used to great advantage with the force pumps and hose.

Where clay can be burnt with wood, this affords a valuable top-dressing for fruit trees.

Fruit trees that are grown by the side of the walks in the kitchen garden and against walls are not, as a rule, supplied with sufficient water to enable them to appropriate the food that is in the soil. Any of the manures mentioned for orchard trees can in this case be applied to garden trees that need support. The soil round the butt of the tree should not be dug so as to injure the fine roots which come to the surface for food. These remarks apply particularly to Strawberries, Raspberries, Gooseberries, and Currants. Good mulchings with decayed manure destroy weeds, and the residue can be raked off in the spring, when the manurial qualities will be washed out.

A few hints upon the quantities that may be safely used of the various phosphatic, nitrogenous, and potassic manures will be useful to some readers of this essay.

The sizes of the tree must be the index by which the operator must judge in manuring it. To give a pound of guano to large old or long established Apple or other trees would be like giving a fly to a lion, while to a spider it might be a good meal.

Nitrate of soda  $\frac{1}{4}$ , and superphosphate of lime  $\frac{3}{4}$ , may be applied at the rate of 2 lbs. to each tree having a root area of 8 square yards—more to an old and less to a very small tree; give three dressings each year.

Phosphoric slag or basic slag will be found to improve the colour of the leaves and increase the size of the fruit, particularly stone fruit, and can be used from 2 lbs. to each tree having a root area of 4 square yards; give three dressings each year.

Sulphate of ammonia is very active, and so soon lost that it is almost useless applying it by itself for old fruit trees.

Nitrate of potash is perhaps the best manure for supplying nitrogen and potash. The best way of supplying these to fruit trees, and to be within the reach of every gardener, is to make heaps of wood ashes, and ashes from the burning of refuse, and mix all the urine at his disposal and apply as a top-dressing; give three or four dressings each year.

Kainit will supply potash and soda, and may be used the same as nitrate of potash; give three or four dressings each year, 2 lbs. to a tree having a root area of 8 square yards.

Sulphate of iron.—This I have applied as a surface dressing upon old orchard trees which had been root-pruned in the autumn or winter at the rate of 4 lbs. to a tree with a root area of 16 square yards, and have been watered in with cesspool liquid. The fruit, which had hitherto been small and shrivelled, developed into fine specimens in succeeding crops.

The reader must not think because the quantities of manure are given above, all may be applied at the same time; they may only be applied together in right proportions.

## HOME MADE MANURE.

I have found the following very satisfactory for most plants and crops, judgment being exercised in mixing and applying, always bearing in mind the nature and disposition of the plants:—

Finely ground basic slag ..	..	..	..	..	..	20 lbs.
Sulphate of ammonia ..	..	..	..	..	..	20 "
Nitrate of soda ..	..	..	..	..	..	40 "
Bone ash (powdered) ..	..	..	..	..	..	40 "
Kainit ..	..	..	..	..	..	40 "
Nitrate of potash ..	..	..	..	..	..	80 "

These ingredients should be finely powdered and thoroughly mixed immediately before use. The mixture will be found to contain about 7 per cent. of phosphorus pentoxide, 6.5 per cent. of nitrogen,



14 per cent. of potassium, and 10 per cent. of lime. The phosphorus pentoxide, potassium and calcium will be in a form readily available by plants. If it is supposed phosphates of the soil are deficient, a dressing of superphosphate of  $1\frac{1}{2}$  lb. to 8 square yards will be found to supply the deficiency.

#### NEW ORCHARDS.

Where fruit orchards are about to be made, and there is time to wait, the ground ought to be prepared twelve months prior to planting. If the soil is poor trench the ground 2 feet deep. Remove the first spit of the trench, which should be 2 feet wide; also remove the bottom spit. Remove the second top spit, and carry all three spits to where the trenching will be finished. A good dressing of manure should be placed in the trench, and the second bottom spit thrown upon it. Another good dressing ought to be placed upon that, when the third top spit should be thrown upon the second layer of manure, or in the position whence the first spit was removed. There will always be two trenches open. An ordinary garden crop should be grown upon the ground the first year, and in the autumn the soil should be again trenched. Any addition of manure must be left to the discretion of operator. When the ground is trenched the second time the manure will be so incorporated with the soil that in whatever direction the roots may go food will be found, and not in quantities large enough to cause gross growth.

If the soil is in cultivation, and there is a large quantity of humus present, some superphosphate, half-inch bones, and old mortar rubble should be incorporated with it, and dressings of new lime spread upon the surface after planting. Farmyard manure should not be used, as it will cause too gross growth. Phosphatic, nitrogenous, and potassic manures, applied as directed will give stimulus to the tree and also act upon the constituents of the soil without injurious effects.

#### WALL FRUIT.

The borders for Peaches, Nectarines, Plums, Cherries, and other wall fruit should be prepared with as much care as the Vine border if first-class fruit is required. The soil should consist of the best retentive fibrous loam, and the proportion of other ingredients added as given below. To each ton of loam add

- 1 cwt. of burnt soil and wood,
- 14 lbs. animal charcoal,
- $\frac{1}{2}$  cwt. cow and sheep manure,
- $\frac{1}{2}$  cwt. mortar rubble,
- $\frac{1}{4}$  cwt.  $\frac{1}{2}$ -inch bones.

The whole should be well mixed, but before the border is formed the drainage should be seen to. If the soil is sandy on gravel no drainage material need be put in; but if the subsoil is clayey and impervious to moisture the drainage must be effective. Place old bricks and large stones or cinders in the bottom with mortar rubbish or cinders upon them; next a layer of turf, grass downwards, after which fill in the compost, and plant the trees with great care. After they are fairly started weak solutions of cesspool liquid, 1 gallon to 6 gallons of clear water, may be given at intervals till the fruiting period, when a dressing of nitrate of potash with equal parts of bone ash or superphosphate can be given and watered in if needed. The quantity to apply must be judged by the condition of the tree. Phosphoric slag may be given as a substitute for superphosphate, particularly if the leaves are inclined to be of a yellowish green colour. The advantage of phosphatic manure is that it assists in the formation of the stones in fruit. When the trees show signs of being exhausted cesspool liquid diluted with its own volume of water, and also guano at the rate of 2 lbs. to 30 gallons of water, may be given to each tree in hot weather.

#### VINES.

The compost for making Vine borders should be constituted in the following manner:—To each ton of good loam add

- 1 cwt. of burnt soil and wood,
- $\frac{1}{2}$  cwt. of animal and wood charcoal,
- 14 lbs. of half-inch bones,
- $\frac{1}{2}$  cwt. decayed cow manure,
- $\frac{1}{2}$  cwt. old mortar.

After the drainage is perfected the border should be formed of the well mixed compost. The quality of the border near the surface would be improved by adding a little nitrogenous manure and readily soluble phosphate.

When the Vines are started weak solutions of cesspool liquid may be given, the strength to be one to two buckets to 20 gallons of water,

according to the quality of the liquid. About four applications with this solution will suffice for the first year, and any other waterings must be with clear water.

In the second year apply one dressing in the early spring, and one in the late summer, with basic slag and bone ash at the rate of 20 to 25 lbs. per Vine border 25 feet by 15 feet. A watering may be given with a solution made from the "home-made manure," at the rate of 1 to 2 lbs. per 30 gallons of water, any residue left in the tank to be thrown upon the border.

For the third year two waterings in early summer, and one at the colouring period of the Grapes, of the solution of the home-made manure, should be given. Water also when required with a solution



FIG. 33.—MR. G. A. BISHOP.

of 1 lb. of guano to 20 gallons of water. The undissolved parts from the guano and the home-made manure ought to be spread upon the border.

#### FRUIT BUSHES AND RASPBERRY CANES.

The bushes should be planted in well-prepared soil, and be watered carefully with weak solutions of liquid manure till they are well established, when good drenchings of liquid manure from the cesspool stand pipes should be given. In the spring give a dressing of the "home-made manure" at the rate of half a pound to the square yard.

#### STRAWBERRY PLANTS.

For new beds of the Strawberry plants the soil should be well trenched and manured, as recommended for the preparation of the ground for fruit trees, and its physical condition must be considered. Heavy land needs materials for improving its texture by adding sand, burnt soil, leaf mould, or road scrapings; and by increasing the retentiveness of light soils we increase their value.

The Strawberry plantation here, which is a very large one, is formed upon a sloping piece of ground which falls 12 inches in the yard. The soil itself is only 4 inches deep, resting on sand, and the red sandstone rock is in some cases only a foot or two from the surface. Nothing is done to the plantation only to mulch with good manure in the autumn. Three successive crops have been gathered, and fine fruit is produced; the weight per root has been as high as 2 lbs. Where old beds are in a bad state it would be waste of money and time to try and improve them; have plenty of runners layered, and make new plantations in September. Prepare the soil as I have suggested, and good results will reward your efforts.

(To be continued.)

[We have pleasure in publishing a portrait of Mr. G. A. Bishop in connection with this admirable essay, which doubtless many of our readers will peruse with interest.]





**THE WEATHER IN LONDON.**—The weather during the past week has been of a changeable character. Sunday opened wet, rain falling heavily during the morning. Monday morning was fine; but before noon it rained, and continued so all the day. Tuesday was bright and fine, but at the time of going to press it is raining. Much rain has fallen, and floods are prevalent in the south.

— **SEVERE WEATHER IN YORKSHIRE.**—Writing under date February 28th Mr. A. J. Temple, of Eshton Hall Gardens, Gargrave, Leeds, says, "We had nearly 18 inches of snow on Sunday last, and 18° of frost this morning, with every appearance of it lasting."

— **WEATHER IN THE NORTH.**—February leaves us in wintry garb. There has been more or less frost on every morning during the past week, 13° on the morning of the 25th and 9° on that of the 26th. That day was one of the worst we have had all the winter. From early forenoon for about eight hours a fierce snowstorm raged from the N.E., which appears to have prevailed over the whole country. The ground is under snow, and last night we had 16° frost.—B. D., *S. Perthshire*.

— **HORTICULTURE IN SCHOOLS.**—In giving a lecture on "Hardy Fruits" before the members of the Scottish Horticultural Association recently, Mr. A. F. Barron of Chiswick remarked that he was in favour of horticulture being taught in schools. "It would," said the lecturer, "be of far more use to many in their later years than the Greek and Latin that they were at present being taught."

— **THE NATIONAL CARNATION AND PICOTEE SOCIETY.**—According to the sixteenth annual report the Southern Section of this Society continue to make progress. There has been a large accession of new members during the past year, and the financial statement shows a substantial balance. The annual Exhibition of Carnations and Picotees, held under the auspices of the Society, will take place on Tuesday, July 25th, at the Drill Hall, Westminster, in connection with the meeting of the Royal Horticultural Society.

— **TECHNICAL EDUCATION IN HORTICULTURE.**—For some weeks past Mr. R. G. Waterman has been delivering a course of lectures in Christ Church Schools, Eccleston, a portion of the County Palatine of Lancaster. The subjects treated have embraced the cultivation of Tomatoes, Apples, Cucumbers, small fruits, vegetables, and market flowers. G. Gamble, Esq., Eccleston Park, presided at the meetings, which were very good, and the lectures have been highly appreciated.—R. P. R.

— **THE NATIONAL AURICULA AND PRIMULA SOCIETY.**—The seventeenth annual Exhibition of the Southern Section of the above Society will be held in the Drill Hall, James Street, Westminster, under the auspices of the Royal Horticultural Society, on April 25th. In issuing the report for 1892 the Committee testify to a still increasing interest in the cultivation of Auriculas and Primulas. Mr. James Douglas, Barking Side, Ilford, is the Honorary Secretary.

— **PEACH BUDS DROPPING.**—For many years I was troubled with Peach buds dropping, although the trees received a good watering after the fruit was gathered. But since I have given them another good watering, and sometimes two during winter, I have not been troubled with the buds dropping. I think this is why the buds do not drop off from trees outside, as these get a plentiful supply of water during winter, although they are sometimes very dry in the autumn after the fruit is gathered.—ALPHA.

— **PRIMULA OBCONICA.**—This free flowering Primula is very easily raised from seed sown in March and put in pots when ready, the largest plants ultimately filling 7-inch pots, the smaller being very useful in those 4 inches in diameter. Placed in a temperature of 50° flower spikes are freely produced all the winter, and continue to do so until April. For cutting the blooms are prized, lasting quite fresh in water ten days or more. Those who have not tried this plan of raising a stock of plants would do well to invest in a packet of seed forthwith.—E. M.

— **DEATH OF MR. GEORGE PHIPPEN.**—We regret to record the death of Mr. G. W. Phippen of Reading, which took place on the 23rd ult. Mr. Phippen was quite a young man, being in his twenty-ninth year.

— **THE GENUS DIANTHUS.**—Mr. F. N. Williams, F.L.S., has prepared a monograph of the genus *Dianthus*, which has been published in the journal of the Linnean Society. Mr. Williams describes 238 species and a number of hybrids.

— **WAKEFIELD PAXTON SOCIETY.**—At the recent meeting of the members of the above Society Mr. W. Daniels of Dewsbury read a useful and practical paper on "The Azalea." Mr. Brown presided, and the vice-chair was filled by Mr. George Gill. Mr. Daniels was heartily thanked for his paper.

— **EUONYMUS LATIFOLIA VARIEGATA.**—For conservatory decoration this is a most useful plant. It is, moreover, tolerably quick in growth for a plant of its kind, for in three years from inserting the cuttings it is possible to obtain excellent bushy plants in 5-inch pots. Low standards of this plant are also very effective. They soon form stems, but for this purpose are better worked on a strong-growing green variety.—W. B.

— **VINES AND CLOSE PINCHING.**—I quite agree with Mr. Stephen Castle's opinion (page 155) on the above subject. Last season two vineries, side by side, consisting chiefly of Black Hamburgs, were started about the same date. One was pushed more than the other, and being earlier it received more attention, and the Vine laterals were kept closely pinched. The other being later came in at the busy season, and the Vines were allowed to grow some length after the first stopping. The result was the Vines in the earliest house produced larger bunches with finer berries, and of a better colour. The Grapes in both houses had finished ripening by the beginning of September.—G. F., *Trafalgar*.

— **LEE, BLACKHEATH, AND LEWISHAM HORTICULTURAL SOCIETY.**—The usual monthly meeting was held on Friday evening last, at the Institute, Old Road, Lee, when Mr. H. J. Jones, F.N.C.S., F.R.H.S., the well-known Chrysanthemum grower of Ryecroft Nurseries, Lewisham, gave a paper on "Chrysanthemums and Their Culture." The room was crowded to excess by an enthusiastic audience, and the lecturer was listened to with the most marked attention, but owing to the very able and practical way with which he treated his subject very little room was left for discussion. It is to be hoped that Mr. Laing of Forest Hill will have an equally successful audience on March 24th, when he intends reading a paper on "Tuberous Begonias."

— **ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.**—Arrangements have been made to hold a grand Exhibition of Orchids and other plants in the gardens, Old Trafford, under the auspices of the Royal Botanic and Horticultural Society of Manchester. The Show will open on Friday, May 19th, and close the following Thursday, May 25th. A liberal schedule has been prepared, and for the best miscellaneous collection of Orchids in bloom open to amateurs, the sum of £30 is offered as a first, and £20 as a second prize. Similar prizes will be given for Orchids staged by nurserymen, besides many of a smaller amount. Liberal prizes are likewise offered for groups of greenhouse and stove plants, and collections of hardy flowers.

— **SOME FINE FREESIAS.**—The finest *Freesia refracta alba* and *F. Leitchlini* that I have ever seen flowering at one time is in the garden at Corhampton House, near Bishop's Waltham, the residence of Colonel Campbell Wyndham. The plants are in five dozen 48-sized pots, averaging five bulbs in each pot. The growths, including the pots, range from 18 inches to 2 feet high, and there are fully 600 spikes of bloom expanded at one time, each spike averaging eight flowers. The bulbs, Mr. Cawte informed me, are potted in August in a compost consisting of three parts fibry loam, two parts peat, one part dried cow manure, and a free admixture of sharp silver sand. The pots are at once plunged to their rim in coal ashes in a temporary frame out of doors. The frame is covered with wooden shutters until the new growth is an inch high, when light and air is admitted freely, excluding frost of course. When the shoots are 4 inches in length the plants are carefully staked and removed to a shelf close to the glass in the greenhouse, where the night temperature does not exceed 50°. Water is freely yet carefully supplied to the roots, the house being well ventilated. Here they remain until the flower buds show, when they are removed to the front stage.—E. MOLYNEUX.



— EXPORTATION OF RHUBARB AND CELERY.—The exportation of foodstuffs from England to the United States would be a strange reversal of the order of things now prevalent. But, according to Dr. Fream, it has been attempted by a Yorkshire farmer, and the experiment is such as to deserve success and to attract imitation. From a farm less than six miles from Leeds he has exported 10 tons of young Rhubarb, which reached New York in time for the Christmas markets. The Rhubarb was forced in sheds, and was packed with straw in hampers for exportation. Besides Rhubarb, other succulent products, such as Celery, afford sources of profit to farmers near the large towns of Lancashire and the West Riding. Much cultivation of this character is carried on in the neighbourhood of Selby.

— GOOSEBERRY TREES AND SOOT.—Not far from where I live there is a field of 100 acres, let out in allotments of from one to several acres, all being under cultivation as a market garden. While one person devotes his whole piece to vegetable culture, others will grow nothing but fruit. Gooseberries are perhaps the most important crop, the fruit being gathered green for supplying early markets. The situation is well sheltered from the north-east by a wood of Scotch Fir. In some instances no other stimulant is given to the trees but soot, and so well do they look that it is no wonder the owners adhere to the following practice. In February the soil between the trees is forked over and a heavy dressing of soot given, in some cases it is spread an inch thick. It is allowed to lie for a week or two, when it is lightly forked in. If placed in contact with the roots in such quantities when fresh it might injure them. I have never seen trees looking so well. In nine cases out of ten they are never pruned.—E. M.

— PANSIES IN WINTER.—I am unable to write so strongly on the keeping properties of Pansies throughout the winter as I can of Violas, but I imagine that what suits the one would apply precisely to the other. We grow several thousands of blue, white, yellow, and others, such as Countess of Kintore, and find no difficulty in maintaining a good stock by striking cuttings every year. About the end of September we take off as many young shoots as possible, cut each to a joint, and dibble them in boxes or in some slight boundary made bed. The only protection they receive are the plank sides made in the shape of a frame and some light coverings made of Willesden prepared paper which has been tarred. These coverings are removed daily unless frost or exceptionally wet and stormy weather prevails. By the spring we have a large stock of well-rooted plants, which are removed to their summer positions as early as possible; they then get established and bloom all through the season. Many are left for the second summer, when they bloom early and profusely, and very rarely do we lose any. After that they are destroyed and younger plants take their place. Hitherto I have not had the least difficulty in keeping Violas, and I would recommend "D., Deal," (page 130), if he is not in the habit of doing so, to try and root cuttings yearly about the time he would Calceolarias.—J. W. MOORMAN.

— CYCLAMENS AT HAM COMMON.—It is almost only at the market growers of the Cyclamen that a really fine show of these beautiful winter flowers can be seen. I saw such a display the other day at Mr. J. Walker's market garden. One long house of 150 feet, a low span with 4-feet stage on either side, full from end to end, with myriads of plants in beautiful bloom. Whites largely predominated, although there were many lovely rose, cerise, and deep red flowers. The plants were all in the regulation 48-sized pots and in excellent health. Seed is usually sown in September rather early, though some growers prefer the month of August. However, it is of not much use to have Cyclamen largely in bloom until Chrysanthemums are past their best. There was in another house a number of seedlings, each having now about two leaves. These are from an early autumn sowing and are still in the seed pans, pots, and boxes, for these receptacles vary. Mr. Walker prefers sowing thinly, picking first all the finest seeds. In small 32's about twelve seeds are sown thinly, and in 6-inch pans about twenty seeds. Thus carefully sown the seedlings come evenly and do not need transplanting until the spring, when they go direct into 60-sized pots. Later they are potted into 48's and then that labour is over. The base of the soil in the seed pans is rather turfy loam, and on that is laid half an inch of finer and slightly peaty soil, as this, though long in the pans, does not become hard set. The smaller or more imperfect seeds are sown separately, and on the whole these show weaker leafage. Many of them later are rejected. Mr. Walker rarely takes more than two seed pods from a plant, as he believes firmly in securing fine seeds rather than having double the number of weak ones.—A. D.

— BEGONIA SEMPERFLORENS ATROPURPUREA.—Attracted by the descriptive remarks of this variety I was tempted to purchase a packet of seed on trial last year, and have been more than pleased with the results. The seed was sown at the end of February, and in due course the young plants were potted. The seedlings grew quickly, and by the end of June or early in July I had them planted on a warm border, where they attracted great admiration from their glossy metallic brownish red foliage and orange carmine flowers, the mixture and variation of the combined colours being something new and novel. After the first frost the plants were lifted, placed in 48-sized pots, and allotted the cool end of a warm greenhouse, where they have remained in good health all the winter, making short stubby growths. These, when taken off with a heel or at a low joint, root readily. I have now a fairly large stock, and intend bedding them out during the forthcoming season. As a packet of seed can be procured for 1s. 6d. I strongly advise your readers who have the convenience of a warm greenhouse to give it a trial.—J. W. MOORMAN, *Dulwich Park*.

— LECTURES ON "PLANT LIFE."—Professor Denny of Firth College recently gave the first of a course of six lectures on this subject in the boys' schoolroom, Lord Street, Park, Sheffield. There was a large attendance, many of the audience having to stand throughout the proceedings. The chair was taken by the Hon. Secretary, Dr. Manton, who, in welcoming the lecturer, pointed out that the course of lectures ought to be exceedingly interesting to local florists and gardeners, who were daily watching the phenomena of germination, growth, development, reproduction, and death. In an interesting address Professor Denny pointed out that no scientist, no matter how great, had been able to solve that mystery of mysteries—life. Interesting details were given with regard to the power plants have of accommodating themselves to circumstances, and how they are influenced by their environments. Illustrations of the phenomena of development and degeneration were exhibited and explained, and many interesting deductions drawn from parallel examples in the animal kingdom of to-day and by-gone ages.

— TRANSGRESSING FIG TREES.—Fig trees are not altogether uncommon in Devon, but a couple at Croyde, near Barnstaple, have says the "Western Morning News," made themselves famous by disobeying the law. They have been reported for obstructing the thoroughfare, and are in some danger of suffering for their transgressions, but even the iron hearts of the Highway Board were touched with pity and admiration for the two dumb trespassers. Splendid specimens they evidently are of their species, and their charms have given the farm its name. "We ought to be lenient with them," urged a member, "they are really natural curiosities." Another remarked that they were "splendid trees," so that they must be princes amongst the Fig family of Devon. "But they'd pull a man off the box," urged a Philistine. But the Board were too much impressed with the beauties of the trees, and so the owner will be asked to prune them "a little," just as little, it is to be hoped, as he can. Perhaps a little tying back of the obtruding branches would also be useful. There will now be some pilgrimages to the giant Fig trees, and the owner might be able to "improve the shining hour."

— BOTANICAL LECTURES.—Mr. F. E. Weiss, Professor of Botany at Owens College, recently began a series of twenty lectures on botany at the Botanical Gardens, Old Trafford, Manchester. The lectures are under the auspices of the Lancashire County Council, and are intended mainly for gardeners. Professor Weiss pointed out how important it is that horticulturists should know something about the life of the organisms with which they have to deal. A knowledge of vegetable physiology was perhaps more important to them than the ability to classify plants in their different natural orders. After dealing with the general distinction between green plants which obtain their food from inorganic sources and colourless plants which can only live parasitically on organic substances, he proceeded to speak of the structure of the seed of flowering plants, calling attention to the seed-coat, to the stored up food material, and to the embryo. Some seeds, he said, were extremely tenacious of life. It was perhaps a moot point whether grain found in old Egyptian tombs retained the principle of life, but it was a fact that Strawberry seeds taken out of a pot of jam had afterwards germinated. He explained in detail the process of germination and the conditions favourable to it.

— FROZEN NEW ZEALAND FLOWERS AT IPSWICH.—On Friday last an interesting exhibition of frozen flowers from New Zealand was made by Mr. E. H. Fison at the Art Gallery, High Street



Ipswich. The flowers were arranged on a table in the centre of the gallery. There were in all thirteen specimens, embedded in blocks of ice on basins. The flowers, though slightly damaged, owing to the Customs House officials in London having opened the cases, were in good preservation, but in the brighter varieties the colour was fading. Perhaps the best specimen was a Marquise de Castellane Rose, the petals of which looked in as good order as if just cut. Another favourable specimen was an Erica. An Andromeda was also noticeable. The flowers were white, and in form not unlike the Lily of the Valley. Some Carnations, with the exception of their losing colour, seemed not to have suffered much from their long voyage. Amongst other specimens were an evergreen shrub, some Gladioli, a Milla, Rhododendrons, Boronias, seedling Roses, and Lilies. All the specimens exhibited were grown in November within twelve miles of Wellington, New Zealand. On the table were some fine home-grown Hyacinths, Tulips, and Ferns, which gave the gallery a pleasing appearance.

— WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—  
A meeting of the above Society was held in the Mechanics' Institute on Thursday last, when the Rev. G. H. Spooner, Rector of Woolton, presided. There were two questions placed in the box for answers to



FIG. 34.—MR. A. MACKELLAR.

be given:—First, Which is the best way to fertilise Peach blossoms to insure a good set; second, Whether cuttings or old plants of *Chrysanthemums* are best to grow as trained plants. To the first question, Mr. J. Stoney, Allerton Tower, an excellent cultivator of the Peach, advocated the use of the syringe; and in the second case, Mr. W. Wilson, as an exhibitor of trained plants, advised the use of cuttings struck annually and early. Mr. R. G. Waterman then read a practical paper on "Soils, and How to Treat Them." Mr. A. Rowlands next read his prize essay on "Hardy Plants Suitable for a Cottage Flower Garden." The Chairman, in handing the prize to the essayist, said it gave him great pleasure to preside at the meeting, and heartily congratulated the winner. He also referred to the success of the Secretary, Mr. W. Disley, who was absent that evening owing to his reading a paper on "Useful Border Flowers for Cutting" before the members of the Manchester Horticultural Improvement Society, and for which he had been awarded the second prize, the competition being open to Lancashire and Cheshire. The Chairman offered a prize of 1½ guinea for an essay, the subject to be chosen by the Committee, for competition amongst the members. A hearty vote of thanks to the Chairman concluded the meeting.—R. P. R.

#### SUNNY SANDRINGHAM.

A PRETTY little wayside station, with promise of ample leafage around it in the summer time and within a few hundred yards of the coast line moistened by the waters of the Wash, such is Wolferton. One would be tempted to regard it only with the idle and motiveless

admiration awakened by many a similar station in other parts of England if it had no special associations to quicken dormant interest into active life, but it is the stopping place for Sandringham, the Norfolk seat of H.R.H. the Prince of Wales; consequently, even those who are passing through, on their way, possibly, to the pleasant seaside town of Hunstanton, arouse themselves and survey it with a certain curiosity. Stations are by no means all alike. They have characters of their own, some bustling, others sleepy, some dignified, others dilapidated, and to go a step further, despite an ardent admiration for, and sympathy with, Mr. Ruskin, to whom railways are as pernicious as manufactories, some are ugly, others are beautiful. Wolferton in the concrete has nothing special about it, but in the abstract it enjoys a vague dignity almost more noteworthy than its charming surroundings.

From the sea level on which the station stands the ground rises unmistakably landwards. A stiff hill marks the first decided stage in the upward tendency, and it is supplemented by more gentle ascents which are skirted by broad slopes of wood and Heather. Eight miles away through the Brake, green in the summer time, but now browned by the autumnal sun, lies King's Lynn; across the Wash, its waters flashing in the sun as they spread away from the coast line below, is Boston. A visitor winding his way along the delightful country road on a sunny February morning, when the Fern is bending beneath the first mellow breezes of spring, and the air is spiced with Fir-fragrance, will find beside and behind him pictures that may prove potent enough to lengthen the duration of his journey, even if he be anxious to complete it. It will be strange, too, if visions of the spring and summer beauty, which it must certainly possess, do not suggest themselves to him, transforming the Bracken from brown to green, and clothing the trees with foliage that will shimmer cool in the hot sun haze. If the way be full of attractiveness while yet the fronds remain uncoiled and the buds unbroken, it must have charms of no common kind when Nature is full of pulsing life.

To paint a word picture of Sandringham at once artistic and complete would need a broad canvas and a subtle hand. The task is embarrassing because of its many-sidedness. The great estate is equally remarkable from the point of view of the forester, the sportsman, the farmer, and the gardener. For the one there is the woodland, for the other the cover, for the third the fields, and for the fourth the fruit, vegetables, lawns, and flowers. To most readers of these columns the latter would be the most interesting feature. Their thoughts would turn from the furrow to the flower garden, from the kennels to the vineries, Peach houses, and stoves. Sandringham from the gardenesque standpoint—that is how they would regard it, and it is from this position that I venture on a few reflections suggested by a chance visit and an hour or two under the guidance of Mr. A. MacKellar, who, qualified by experience gained at Hopetoun, Tynningham, Chatsworth, Penrhyn, and ten years as head gardener at Floors Castle, the Duke of Roxburghe's beautiful seat near Kelso, has proved himself in every way worthy of the post to which he had the honour of being called two years ago. Gardeners in general will not examine without interest the portrait (fig. 34) of one of their craft, who, while still comparatively young, has risen to one of the most distinguished posts in the profession. Moreover, those who have their spurs yet to win might do worse than imitate the energy and the unwearying devotion to duty, which, combined with cultural skill and a modest unassuming disposition, have secured Mr. MacKellar what he most prizes, the confidence of those whom he serves. Complete subordination of self to work and concentration of thought upon the fullest development of beauty and utility in his sphere of labour are characters which impress themselves as dominant in the present head of the gardens at Sandringham.

Leaving for the time being the fruit and vegetable gardens, also the plant and fruit houses, a few words shall be devoted to the pleasure grounds and flower gardens around the mansion. February is not, it will be agreed, the month to see them at anything approaching their best, but they are by no means devoid of attractiveness even at this unfavourable season. The mansion, to which an extensive wing has been added since the fire some time ago, is a long and not very lofty building with a considerable frontage, and stretching away in front of the windows is an extensive series of beds which in the summer are gay with flowers. Though necessarily less brilliant now they are little less beautiful, for they are planted with a great variety of small shrubs, the green, golden, and silvery tints of which make them cheerful in the dull season. Golden Yews, Berberises, Golden Hollies, Portugal Laurels, Golden Box, Aucubas, Euonymuses, Retinosporas, and many others are blended in a tasteful and effective manner. No more striking example of the possibilities in winter bedding could be afforded than is here provided, and the contrast between the system and an imaginary array of empty beds and bare soil is vividly presented. Thousands of bulbs also occupy the beds, and throughout the spring they will lend the brightness of their rich and diversified colours to the scene. Rhododendrons, too, will contribute, large quantities of choice named varieties being planted and retained until their flowering period is over, then lifted to make way for summer plants.

Through banks of these beautiful plants, amongst numbers of shapely Conifers, and by groups of shrubs, the visitor finds his way to the "Church Walk," a delightful avenue lined with lofty Scotch Firs their trunks hidden in clustering masses of Ivy. At the end is the beautiful little church, it and its approach constituting one of the most charming pictures which could be found, not only at Sandringham but in the whole country. Then there is the lake, widening and narrowing, advancing and receding, with quiet pools at the foot of shelving boulders



of rock. Water looks at its best, of course, when it is lying placid beneath a fierce summer sun, and it is easy to conceive how delightful the lake must be in the hot weather. Almost at right angles is another sheet of water, immediately under the windows of the residence now being prepared for the Duke of York. This encircles an island which is being laid out and planted. Through the noble old Oaks on the left of the dwelling stretches the extensive park with its thousands of deer, presenting a splendid view from the banks of the stream. A ramble through the grounds from this point to the kennels and the keeper's house at the top, and thence back towards the mansion, is full of pleasure, new beauties unfolding at every step. No tree-lover could fail to observe with pleasure the thousands of graceful Conifers, with which the grounds are full. Amongst them are some magnificent Wellingtonias, fine *Picea nobilis* and stately Cedars. They are much too numerous for individual notice, and form, without doubt, one of the finest features of the place. It is not a question of a few isolated giants, for the soil

said in reference to the grounds at Sandringham, but considerations of space demand that attention should be given to other features of the estate. I should like to pause for a few moments, however, to express a more than superficial admiration for the houses in the occupation of the head officials with which the grounds are dotted. On few of the great estates in the United Kingdom is such provision made for the workers on them as exists at Sandringham. The residence of the head-keeper is a most beautiful one, and equally so is that of Mr. MacKellar. It will not be without interest to reproduce a photograph of the latter dwelling in order to show, so far as is possible with an engraving (fig. 35) the consideration in one important respect which is shown to those who are fortunate enough to be chosen for filling responsible posts by the Heir to the Throne of Great Britain. With its projecting eaves and covering of Wistaria and Roses the house presents an aspect which can hardly fail to charm, while within it is roomy, cheerful, and comfortable, new wings having been added to increase the convenience of its occupants. Within

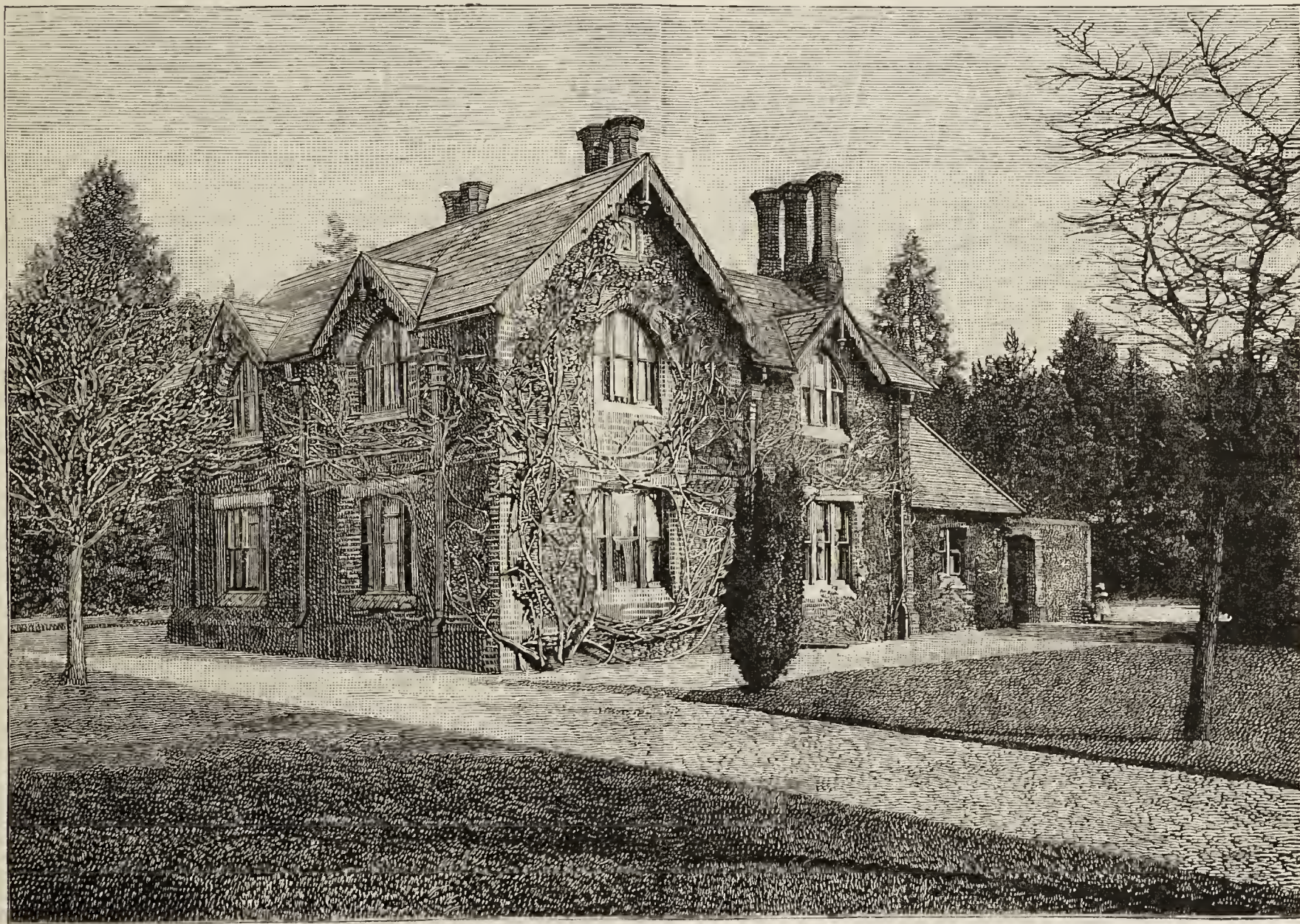


FIG. 35.—THE GARDENER'S COTTAGE AT SANDRINGHAM.

hardly has substance enough to produce many specimens of the largest size, but of a vast and varied collection of medium-sized handsome trees. Nothing adds more distinction to a garden than well-managed Conifers, and at Sandringham they play a most important part.

Not far from York Cottage is the beautiful wild garden, full of Rhododendrons and other shrubs now fast swelling their buds. The slopes and recesses suggest delightful pictures in the springtime, when the larger plants are in full but tender leaf and the thousands of Primroses and other flowers are at their best. Already patches of Snowdrops are whitening the grass, and later on Daffodils will lend the help of their graceful flowers and quiet harmonies of colour. Much has been done and much more is being accomplished to add beauty and interest to this and other parts of the grounds. Even now they are far from being unworthy of the place, and there can be no doubt that the steps which are being taken in the development of many special features and in the planting of shrubs and flowers will greatly enhance their attractiveness. A winter tennis court with rustic houses connected is discovered hidden away among the trees, and must form a most pleasant resort when the turf is rendered unsuitable for play by the weather.

Much could be written in addition to the few words which have been

and without there is that air of beauty, comfort, and happiness which tends to sweeten life so greatly. A few hours within its walls convince the visitor that Mr. and Mrs. MacKellar are as anxious to prove themselves worthy of the many kindnesses bestowed upon them as they are deeply sensible of the good fortune which has befallen them in having the privilege of serving where service is at once a pride and a distinction.

In speaking, as I hope to do in a future issue, of other features of the gardens at Sandringham, I shall refer to the splendid provision that is made for the under gardeners, but I should like, while referring to the dwellings on the estate, to say a word about those provided for the labourers. At one end of the grounds is what might be termed the model village of West Newton, a cluster of sound, well-built, comfortable cottages, with large gardens attached, which the occupants are encouraged to keep cheerful and productive. There is, too, a club and library, where the men can assemble after their work is over, and, without payment, read the newspapers and books provided for them. In another part a school is maintained by the Princess of Wales. Full employment is always found for the men at a higher rate of pay than is given elsewhere. Moreover, the utmost consideration is extended in respect to the hours of labour. From the 1st of November to the 1st of



March the workmen leave at 3 P.M. every day, and although the hours are of course longer in the summer, the average working day throughout the year is less than eight hours. It is pleasant to record such facts as these, proving as they do beyond all dispute by the bitterest critics of royalty that a blind selfishness is not the invariable ruling passion in those whose path in life is exalted. Those in closest association with the Prince and Princess of Wales speak of never-failing courtesy and kindness, and the conditions of life which prevail amongst the workers at Sandringham have only to be imitated elsewhere to bring happiness, contentment, and prosperity to rural England.—W. P. W.

(To be continued.)



#### THE NATIONAL CHRYSANTHEMUM SOCIETY.

HAVING nothing at stake I did not avail myself of the first invitation to attend the annual meeting of the National Chrysanthemum Society; but in order to test the clique question I embraced the first offered privilege to nominate a few well known country growers. Knowing the certainty that no outsider stands the least chance of being elected on the Committee I did not take the trouble to ascertain whether my nominees would accept office, and I here tender them my humble apology for using their names entirely without their permission.

However, the results of the recent election proceedings is a very faithful illustration of the late controversy published in the *Journal of Horticulture*; and as it is reported the Society has benefited by this said correspondence, it may be hoped the Editor will extend the privilege, as it appears the Society still needs all the assistance it can obtain.

I am glad to see that a more modern system of electing members of the Committee is likely to be introduced, for surely the primitive method of merely showing hands can hardly be accepted as satisfactory, especially where it has to be repeated several times over, according to the number of nominations, and this in a crowded room. In these days of enlightenment, easy communication, and cheap postage, the elections ought to be made by ballot. This could easily be managed by the use of postcards. Then every member, however remote, could record his vote cheaply and efficiently, and thus make the Society in reality "national" instead of what it is at present.—J. H. GOODACRE.

#### ELECTING OFFICERS.

I HAVE so much sympathy with your remarks with respect to the way in which the election of the N.C.S. Committee members were recently elected by show of hands, that in submitting the code of rules adopted from Gardeners' Association here, I got a clause inserted that all contested elections should be by ballot. That was done to prevent any jerrymandering of the election by show of hands, as in our case the attempt to elect twelve members out of seventeen nominated on to the Committee would have led to endless trouble and misapprehension. All the names were written in chalk on a board, then each member was supplied with a piece of paper on which to write down his favoured twelve names. These were collected, counted by scrutineers, and reported without a murmur of dissatisfaction, because it was not only fair, but the only fair way of conducting such an election.—A. D., Kingston.

#### THE N.C.S. ANNUAL MEETING.

It affords me great pleasure to learn that the correspondence which has recently appeared in the *Journal of Horticulture* anent the above Society has resulted in an addition to its number of members, and thereby given it strength. When I first brought the matter of its certificates to the notice of your readers I had no other wish but to strengthen the Society. With your permission, I will still continue such letters; further, will you let me add, when the "Beauty of Exmouth" correspondence is finished, I propose publishing the whole in book form and to distribute it among the Chrysanthemum fraternity generally, and I expect the Committee of the N.C.S. will award me one of the Society's very best medals for the great assistance I have given.

Many members have written me asking why I did not attend the annual meeting and demand a thorough investigation into the Beauty of Exmouth case. To such let me reply that when I learn the Committee are desirous of an unbiased investigation I shall only be too pleased to meet them. To journey about 400 miles only to be "sat on" or talked down is a "pleasure" and expense I care not to indulge in. However, I have carefully read the Secretary's annual report, and if not occupying too much space should like to offer a few remarks on it. Can Mr. Dean or any other official inform us why one particular name in connection with the Holmes Memorial challenge cups is given such prominence? Did the bearer of that name collect the whole of the money subscribed for the cups? If so, he certainly deserves a word of praise, and other matters will explain themselves.

There were certainly just as important subjects omitted from the report—to wit, the "Wells" case, and how a member of the Committee

had been condemned for his action in the affair. Neither is there anything said about the Beauty of Exmouth case, the appointment of an "Investigation Committee," the result of the "investigation," and how a "lawyer was consulted," &c. Surely these matters are as important to the Society as the name of the member who initiated the Holmes' Memorial cups.

The next annual report should contain several interesting items. For example, "At the last annual meeting a new rule was proposed by Mr. Addison for the purpose of punishing offenders; but the Secretary informed the meeting that if such rule was adopted he should resign his position as Secretary. Also, that when several gentlemen were proposed as members of the Committee attention was called to the fact that they had taken part in a controversy criticising the management of the Society." But what curious reasoning some of the officials display! These members had taken part in a discussion which had benefited the Society by adding to its number of members. One of your contemporaries comments on the fact that only Mr. Addison and Mr. Wells spoke in favour of the proposed new rule, which stipulates that any member found guilty of any irregularity should be expelled. If we may judge how Messrs. Pearson's, Goodacre, and others' names were received, it would only be fair to infer that any committeeman who supported such rule against the wish of certain officials would be a marked man. I can only say that I have received letters from many of the Committee in favour of such rule, and also favouring a thorough investigation into the Beauty of Exmouth case; but they dare not speak, so it appears.—W. J. GODFREY, Exmouth, Devon.

[We have another trenchant letter on this subject, for which we cannot possibly find room this week.]

#### CHRYSANTHEMUM MRS. JACOBS.

THIS variety is deserving of more extended commendation than it has hitherto received. At Bradford, York, and Hull it obtained certificates and attracted a large share of attention from the visitors. To those who do not look to mere size in a flower as its chief qualification, Madame Baco, from which Mrs. Jacobs is a sport, has always been highly appreciated for exhibition purposes; but where medium-sized flowers for decoration purposes are required it has held a high place, and the sport when it becomes known will be an acquisition for either purpose on account of its popular colour, which may be best described as a warm terra cotta softened to a rosy fawn, difficult to describe but most beautiful in appearance.—KIWI.

#### JUDGING CUT BLOOMS—BY COMPARISON.

I HAVE many times been a witness of the various methods adopted by judges in arriving at their decisions regarding the relative merits of the stands of blooms in competition. That which I regard as being the least satisfactory is placing a stand of blooms in front of the opposing stand for examination as follows:—The top bloom in the left hand corner of one stand is compared with the flower occupying a similar position in the other stand, and so on until all are examined in the same manner. The number of points which one row is supposed to obtain over the opposing row is added to or taken off, as the case may be. When the same variety is met with in the two stands their relative merits are found and compared. But when can two stands of even twelve blooms be found to coincide so exactly all through?

Suppose a well developed bloom of Avalanche came in comparison with an exceedingly good one of Stanstead White, although Avalanche was in the opposing stand, also the latter, owing to the difficulty experienced in obtaining, it would score two points over its rival, as the former can be grown so much more easily. Again, suppose the same three blooms in the first stand, A, were Vivand Morel, W. W. Coles, and Avalanche, and in a similar position, in stand B, Etoile de Lyon, E. Molyneux, and Elaine. Presuming the blooms in stand A were superior to those in stand B, three points would be scored by stand A. But if in stand B the same varieties were found as named in stand A, and of much superior merit individually, and they were compelled to compete with, for instance, Boule d'Or, Stanstead White, and Mrs. Alpheus Hardy, although of superior quality to those of the same name in the opposing stand, they would be outclassed by reason of the difficulty experienced in producing the blooms of these sorts. In my opinion justice would not be done to blooms so placed, and I know that the plan of searching for the same varieties in the two stands for just comparison is not the general practice.

From a close observation of methods adopted by various judges I think there is but one way to arrive at a just estimate of each bloom, and that is by determining beforehand upon a maximum number of points and allotting them accordingly. I would, in conclusion, suggest to adjudicators who adopt the practice and method I condemn to consider the matter well between now and the next show season, and see if my remarks are not justified.—SADOC.

#### CHRYSANTHEMUMS AS ANNUALS.

I HOPE I shall not surprise the growers of large blooms for exhibition by adopting such a title to my paper, or that others will not think that I am furthering the interest of those firms who offer prizes for plants grown from seed purchased direct from them. The apparent ease with which Chrysanthemum seed can now be purchased, and the large amount of interest to be gained by trying the experiment, alone prompts me to pen this short article.

During the early part of last year I tried the experiment by sowing



some seed. In a few days the young plants appeared, after the manner of Mustard and Cress. When large enough to handle they were pricked off into boxes similar to Lobelias; then in order to try and avoid the large number of suckers that seedling Chrysanthemums are always throwing up from their base, when they were tall enough, say from 1½ to 2 inches, I cut them all off at the surface of the ground with a sharp knife, inserted the tops, and treated them as cuttings. All readily rooted in a propagating pit, and from that state they were placed singly in pots the same as other Chrysanthemum cuttings are treated, repotting as it became necessary. The great variation in foliage and the marked difference in habit afforded me much interest to watch them on summer evenings.

During August, finding that they were somewhat late in showing their bloom buds, I became impatient and pinched out the tops of many plants. This had the result of producing several breaks; of these I selected five or six of the strongest on each plant, and allowed them to grow and bloom without further manipulation. The major part of them either proved singles or semi-singles; some resembled the Pompons, while a few favoured the Japanese and incurved varieties. The singles were remarkably pretty. One was like the yellow Marguerite, while another was very similar to the Ox-eyed Daisy, *C. Leucanthemum* (in all but foliage). A very large per-centage of them were highly pleasing and interesting, and would be useful in most gardens where a stock of flowers are required late in year.

Chrysanthemums grown thus would be very suitable for standing about in corridors, or for fringing or mixing with groups. Ladies, as a rule, are very partial to single flowers, and I am sure from my own results it would be worth repeating annually, for after flowering all could be consigned to the rubbish heap, having performed their part exactly in the same way as Cinerarias are treated. To all that can afford the time for growing seedlings let them try the experiment, and I can assure them that the results will amply repay the time spent upon them.—J. W. MOORMAN.

### A PRIMER ON HORTICULTURE.

MESSRS. MACMILLAN & CO., the well-known London publishers, issue shilling primers on various scientific and practical subjects. The latest edition is entitled "HORTICULTURE," and consists of ten lectures delivered by Mr. J. Wright and coadjutors for the Surrey County Council. Though necessarily much condensed, the lectures cover a wide field in cultivation, about 140 subjects being included in the list of contents. The lectures are entitled—1, "The Advantages of Allotments and High Culture of the Land." 2, "The Soil: its Nature, Preparation, and Improvement." 3, "Raising Crops, Trees, and Plants." 4, "The Food of Crops—Manuring the Soil." 5, "Enemies of Crops and Trees." 6, "Planting Vegetables and Fruit." 7, "Profitable Culture—Green Crops and Small Fruits." 8, "Profitable Culture—Root Crops, Fruit Trees, Tomatoes, and Mushrooms." 9, "The Preservation and Disposal of Garden Produce." 10, "Encouragement and Endeavour—High Ideals in Gardening."

As a sample, we cite the concluding portion of the first lecture, with a few of the questions and answers arising therefrom.

What may be termed the garden culture of fruit and choice vegetable crops for sale cannot be successfully conducted in small field plots in remote country districts, far distant from railways in direct communication with great centres of population; but such crops can be grown much better than they are now in gardens attached to homesteads. Families may have better supplies than heretofore of what is wholesome and delicious, while those

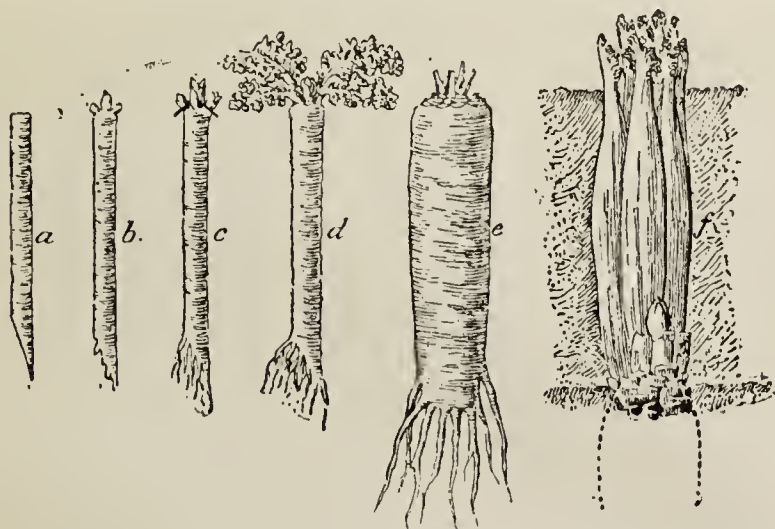


FIG. 36.—RAISING AND BLANCHING SEAKALE.

a, Root cutting made in the autumn; b, showing buds in the spring; c, rooted and growing, side buds marked for removal; d, rooting and producing leaves; e, root and crown with leaves removed in the autumn ready for forcing or covering with soil; f, growth from the crown ready for cutting and use.

who are gardenless in the localities and adjacent towns will be glad to take the surplus when fresh and of the first quality. It is low quality produce that finds no sale. The best is always in demand at prices which are remunerative to the growers.

Splendid culture is displayed in some field plots, and evidence of taste and loving care is apparent in bright windows and forecourts, as well as in full and well-cropped gardens generally; but these are in the minority, a

minority, however, which is happily becoming less yearly, especially in districts where encouragement has been given to induce a more general indulgence in the healthful and delightful pursuit of domestic gardening.

Our wish is that all shall be taught to make their gardens and plots to the fullest extent useful and enjoyable. We are earnest in this work, and hope to incite earnestness in others, because we know it is for the good of all. We wish to see mutual trust, confidence, and goodwill prevail among all sections of the community, for it is only by a linking together of the best efforts of all that the greatest number of homes can be made happy and the nation prosperous and strong.

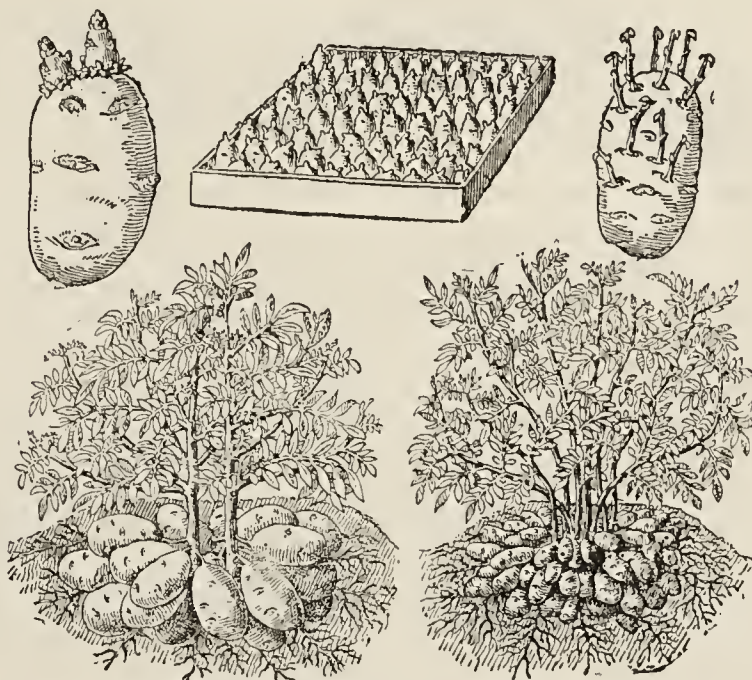


FIG. 37.—SEED POTATOES AND RESULTING CROPS.

Prepared set (as in tray) and its crop on the left; weakened set and its crop on the right

### QUESTIONS AND ANSWERS.

Q. How much land can an employed labourer work fairly in his leisure hours?

A. That depends on the land and the man. Heavy land needs twice the labour that light land does; and a man who delights in gardening will do twice the work that another will who takes no pleasure in it. It is better to work twenty rods well than forty badly; or to have a rood clean and fertile than an acre slovenly and exhausted. Those men should have the most land who manage it the best, whether it is apportioned in rods to labourers or acres to farmers, because the one class improves and the other depreciates the value of land.

Q. Do you think a man who is in full and regular employment can manage a rood of land to his advantage in his spare hours?

A. Many do this; but others would be better with half the quantity. A rood (quarter of an acre) of good land well managed will grow from 2 to 3 tons of Potatoes besides some other crops, and the produce must be of advantage to the tillers.

Q. Do you know of any instances of working men having allotments of an acre?

A. Yes; many, and many who have 2 acres managed well, but the men are not in full employment as wage-earners, and are always ready and glad to work when wanted by the farmers of the district.

Q. Do the farmers object to the man having so much land?

A. Not in the least in the district where it has been the custom for many years, because they know they can get men to do their work when the work needs doing.

Q. Are you of opinion that small plots of about 20 rods can be of any real service to working men and give them satisfaction?

A. Decidedly. There are at least 5000 of such plots around Nottingham alone, and so greatly are they valued that if such an impossible thing were to happen as a movement for dispossession it would lead to a provincial revolution.

Q. Can you say what crops are chiefly grown on these plots?

A. It may fairly be said that in one or the other of them everything may be seen in its season that is pleasant to the eye and good for food—flowers of various kinds, fruit trees and bushes in thousands, and vegetables of the best varieties and the highest quality. The gardens are much cherished, and so are thousands of others still smaller in various parts of the country.

Q. What is a fair price to pay for land in allotments?

A. You may as well ask me what is a fair price to pay for a watch. I have one I would rather sell for 10s. than another for £10; and I would much sooner pay at the rate of £5 an acre for the best land than 10s. for the poverty-stricken and inferior.

Q. Do you think that increasing the number of small cultivators will increase the wage-rate of workers on the land?

A. I do not; because it has not done so in parishes where the land has been largely tilled by small cultivators for generations. Where men are content to remain by earning a little in addition to their wages the numbers are apt to increase; where they are not they diminish, and scarcity in anything raises its value, abundance having a contrary tendency. It is not, however, within my province to answer questions of a controversial nature connected with the acquirement and value of land, and I ask that they may be limited to points of cultivation and management during our course of lectures.

The work contains thirty-seven illustrations. Fig. 36 represents the raising and blanching of Seakale by covering the crowns with soil;



fig. 37 shows well prepared and weakened Potato sets with resulting crops.

The Primer will be useful for distribution amongst cottagers and allotment holders, and not less so to young gardeners; also to some who are not very young, as well as to amateurs, while it contains points for dilution by lecturers. Copies can be had from booksellers, not from the author.



NATIONAL ROSE SOCIETY—TEAS IN MIXED CLASSES.

THIS is a subject which is often discussed with bated breath at committees, and referred to in other places as a matter that *must* be set right, but so far I think those who see some grievance in the fact of an unlimited number of Teas being allowed to be shown in the mixed classes have a following which has hitherto been small, and in the future is likely to entirely disappear.

It would in an early year be a very dangerous rule for our Society to enforce the exhibition of nothing but H.P.'s in the mixed classes, and our champion amateur rosarian practically settled the question recently, when he gave it as his decided opinion that it would never do even to limit the proportionate number of Teas an amateur should exhibit in a mixed box, as he might find it difficult to put up forty-eight varieties.

There can be no question that a few Tea Roses lighten up a box made up principally of H.P.s. There can be no contrast so effective as that of a good yellow such as *Maréchal Niel* or *Madame Hoste* with reds like *Charles Lefebvre*, *A. K. Williams*, or *Victor Hugo*, and the white Teas also give a refining tone to a mixed box which adds to its beauty without detracting from its merit. Moreover, "J. B." should bear in mind as a sound and experienced judge that no special merit or weight is now attached at any good Rose show to the fact of Teas being in a mixed box, as the Teas must be of a size and finish quite on an equality with the H.P.s shown in the same class.

The only people who are likely to demand or have spoken of such restrictions as "J. B." thinks necessary (and even their cry from being "mezzo-forte" sometime back is now becoming decidedly "piano") are rosarians who hardly grow any Teas. As, however, the culture of Tea Roses is extending rapidly there will before long be very few non-growers of this the most desirable class of all. It would be a bad day for the N.R.S. if they ever place any such restriction as the one now being discussed. It would, as far as I can see, help no one, and it would seriously militate against the effective appearance of our large exhibitors' boxes, which would look most monotonous if only shades of reds and pinks predominated. However, from a recent slight trial of strength on the question, one could see that at present the opinion against "J. B.'s" proposition is overwhelming, and such being the case it is not in the least likely at any time to be carried.—CHARLES J. GRAHAME, *Croydon*.

#### THE NATIONAL ROSE SOCIETY'S METROPOLITAN SHOW.

YOUR correspondent, "W. E." page 131, asks why the Royal Botanic Society has not been approached on the subject of holding the Metropolitan Exhibition there. Now in my previous communication I said that everything had been tried in London for that purpose, and when the break up occurred at South Kensington I was deputed by the Committee to approach this Society, and I may say of all the impracticable bodies I had to do with this was the most so, and after a long consultation with its Secretary, I left, and reported to the Committee that nothing could be done; they would give no subsidy, no privileges to members, and, in fact, would do nothing to meet us; and so this, like many other proposals of a similar character, fell to the ground.—D., *Deal*.

#### "THE ROSE DERBY."

I HAVE no wish to continue this discussion, the weight of argument and the trend of public opinion in general with regard to all societies which call themselves "National" is towards a more national policy than at present prevails. But as my veracity on one point—viz., the length of Mr. Grahame's membership of the N.R.S.—has been challenged by him (he would have us conclude he is a very old hand), and although I have offered to apologise if I am wrong, he has done nothing to explain away the fact that his name does not appear in the lists of members of the N.R.S. for the years 1885, 1886, 1887, and 1888, nor, for aught I know, in any preceding year. It is an easy matter to correct this if it is wrong.

The argument from length of membership taken by itself may be nothing, but becomes something when taken in conjunction with other limitations which have been previously noted, together with the fact (if I am inaccurate he will kindly enumerate other shows) that Mr. Grahame has no personal acquaintance with Rose shows north of the Trent, except in the case of Chester last year.—J. H. P.

#### ROSES v. LILIES.

HIGH treason! The Lily put forward as not inferior to the Rose. And this in the very home of the Queen of Flowers, for it is Dr. Wallace

of Colchester (page 128), where the finest Roses in the world are grown, who raises the standard of revolt. Well, a loyal subject as I hope I am, must needs do battle for the Queen, so forward with all courtesy to the fray.

Fragrance is the first point chosen, to be sure a matter of opinion; but can it seriously be denied that some Lilies at least are unpleasant in odour to most people? And is that true of any Rose? The prevalent opinion I think is that the scent of all bulbous flowers is apt to become disagreeable in a close room or in large quantity, but whoever had too much of the fragrance of a Rose? For lasting as a cut bloom the Lily must have a point, and the Rose can afford it; the Queen does not tarry till you tire of her.

"Under glass you may have Lilies all the year round in bloom, not so Roses." I am astonished. Not at Colchester? then surely elsewhere. I forget which year it was that I gathered a Rose out of doors in Suffolk in each of twelve successive months, but it was duly recorded in the *Journal of Horticulture*. Can Dr. Wallace point to a similar record with Lilies?

"No comparison in grace and stateliness." This, again, must be a matter of opinion; for "high art" or ecclesiastical paintings the formal precision of the Lily is certainly more suited, but this style would by no means be considered the *ne plus ultra* by many.

Dr. Wallace admits the Lily is more difficult to grow, and will not suit so many positions as the Rose, but claims an absence from green fly and caterpillars for his protégé. We will admit these two points as cancelling one another, and indeed I do not blame insects for preferring to feed on Roses rather than Lilies.

The defence is sufficient, I think, and the queen can afford to show her magnanimity by declining to attack in her turn. There is plenty of room for both flowers, and even for enthusiasm on the subject of Lilies without finding fault with the universal homage offered to the Rose. I think (was it not lately shown in the *Journal*?) that the verdict of the poets is plainly and strongly in favour of the generally acknowledged queen. Why, even when Swinburne sings of

"The Lilies and languors of Virtue  
And the Roses and raptures of Vice,"

he chooses and cries aloud (alas!) for the latter.

#### FORMALITY AT ROSE SHOWS.

"W. E." (page 131) complains of formality at Rose shows. He wants informal and graceful masses of decorative and buttonhole Roses, and other changes. To this it must be answered that at Rose shows in general, and at a large part of the Metropolitan Show, the Rose is treated as a florist's flower, and judged according to rules. All informal exhibits, such as bouquets, must be judged according to the individual taste of the Judges, which is less satisfactory to the competitors than acknowledged rules. Why not "the names of the Roses very much *en evidence*?" A large portion of the spectators, as may plainly be seen, take the greatest interest in the names, and it would be a hardship to them if the cards were not legible. I fear they are not so clear as they might be in some cases. Then there *are* classes for garden Roses and for buttonholes; and I am sure the exhibits in the latter class of Mr. Mattock of Headington *are* masses of bloom, and very beautiful. I, too, have called out for "plenty of space;" I wish we may get it. But I cannot think why "W. E." wants "American" prizes.—W. R. RAILLEM.

#### STARVED MUSHROOMS.

IT may seem somewhat of a misnomer to term Mushrooms, growing from a bed of manure, starved, but it is a correct definition in many cases. Manure utterly devoid of moisture offers very little more support to Mushrooms than the poorest dry soil, and not so much as might be derived from the latter after it has been well moistened. When, therefore, a very dry bed produces Mushrooms, these are poor and dry, though no more so than might reasonably be expected from such starvation treatment. Unless the manure can be kept sufficiently moist to be constantly, though very slowly, fermenting and decaying, there is nothing to support the Mushrooms, even though the spawn may have run well. A fairly good first crop may be obtained, then all is over. Instead of this comparative failure it ought to be possible to have one extra heavy first crop, and one or two fairly good successional supplies from each bed. Last November our first bed in a heated house commenced bearing early in November and yielded freely well into December. Since then we had a very acceptable second crop, and a third now showing through the soil promises to be even more satisfactory. The secret of success would appear to be in providing enough, and only just enough, moisture in the bed, and a gentle heat in the house. Of bottom heat, that is to say, inherent heat, there is, nor has been at any time, next to none; the trial sticks, whenever tried, nearly always feeling comparatively cold and moist.

For some time past I have been under the impression that too much importance is attached to having a strong heat in the bed when spawned. Doubtless the spawn runs the most freely in a temperature of 85° or so, and experts advise spawning when the heat has declined to that figure, though some recommend 90° "with a downward tendency." Supposing the manure has been well prepared, and the bed formed when the manure is in both a sweet and semi-dry state, the heat recommended for spawning is safe enough as a rule; but all the same it would have been better that such high figures had never been reached. These high



temperatures quickly get rid of what little moisture there is in the manure, and this is the commencement of the starvation process. Where the plan of daily syringing the beds, walls, and floors prevails it is no uncommon occurrence for the surface of the beds to be too moist while the manure underneath is quite dry. As fast as the tiny Mushrooms peep through the soil most of them change to a dirty brown colour, become soft, and make no further progress. Instead of the syringe being used daily in the Mushroom house under my charge it is never employed at all, the watering pot, and that only for thoroughly re-moistening an exhausted bed, being what we believe in. Very fresh manure ought not to be principally used in forming fresh beds. Much of ours is not less than a month, and not unfrequently some of it six weeks, old by the time it has been prepared for use, and rarely indeed does the heat rise to 90°. More often than not the maximum would be 85°, and then for a short time only. Being somewhat stale or well advanced in decay rather deeper beds may safely be formed than is usually done. The best I have ever had, or indeed ever saw, was 18 inches deep at the back and 15 inches deep in front, and within a week of its being spawned the trial sticks were scarcely warm. No attempt was made to hurry this bed, and no water was given, but in the course of about two months enormous masses of fine succulent Mushrooms were to be seen all over the surface. So much for being content to "let well enough alone."

A mulch of strawy litter serves to conserve a considerable amount of moisture in a bed, and is to be commended accordingly, but that alone will not suffice to bring up a second crop. As I have previously hinted there ought, either with or without the aid of a mulch, to be enough moisture in a bed to start and sustain a first heavy crop without any being supplied from the surface. If there is not a partial failure is imminent. After the first crop has been cleared off, the old stumps with the mass of solid matter attached being duly scooped off according as the Mushrooms were pulled, and the holes refilled with fresh soil, about a week or ten days may well elapse, and then a thorough soaking of water should be given. Nothing but quite warm soft water ought to be used at first, this being applied through a fine rose, and repeated the following day. Even then the chances are the manure will not be really well moistened, but it will be in a better state for receiving liquid manure, or say a supply of either Thomson's or Bentley's Vine border manure. Nitrate of soda and common salt are also of good assistance in bringing up a second heavy crop of Mushrooms, about an ounce of either of the four kinds named being dissolved in every gallon of well warmed soft water, and then applied through a fine-rose pot. This application following upon the waterings given should provide enough moisture and food to support the second crop, and the process may well be subsequently repeated with a view to bringing up yet another crop.

A too free use of fire heat is very detrimental to Mushrooms, and should be dispensed with as much as possible. If there is a constant demand for them, then must a little warmth be given all the while, but at no time ought a temperature of 55° to be exceeded, from 45° to 50° being quite high enough as a rule. The fire heat invariably accelerates fermentation in the beds, and they dry all the more rapidly accordingly, poor starved Mushrooms being the result. Where the beds have overheated the manure assumes a musty dry state, which nothing that can be done afterwards will render fit for the production of Mushrooms. Another extreme has also to be guarded against. When the manure is in a cold, saturated state the bed cannot be made productive. It is the happy medium that brings maximum crops.—W. IGGULDEN.

#### A PLEA FOR HEPATICAS.

How seldom do we find a really good collection of these early spring flowers cultivated! In many gardens they may be classed among neglected plants. One sometimes meets with a few grand clumps in very old gardens, or a solitary plant may occasionally be seen in front of a wayside cottage.

With me they have always been especial favourites, and I think they are quite unrivalled among hardy herbaceous plants which flower during February and March. Nearly all the varieties I have seen succeed the best in a rich but rather light soil. If planted in positions where they obtain shelter from the north and north-east winds, the flowers are produced as early as Snowdrops grown under the same conditions. Should the weather prove wet and unfavourable at flowering time, the precaution of placing a handlight over the best clumps is well repaid, especially if the flowers are wanted for use in a cut state. When this course is pursued the flowers are kept perfectly clean, come better in colour, and the stems are considerably lengthened, a combination of advantages well worthy of the extra trouble involved in producing. Where large masses are wanted the clumps should be left undisturbed for several years.

When it is necessary to increase the stock clumps may be divided into pieces having three or four good crowns each. If this is done in October, the divisions being placed in good soil, and afterwards receive proper attention in the way of frequent stirrings of the soil during the summer months, and in dry weather are given a few good soakings of liquid manure, extra fine flowers are produced the following year.

*H. angulosa* is, perhaps, the most showy variety grown, and produces very large flowers of a sky blue colour. *H. triloba alba* and *triloba cœrulea* are also good, and showy single varieties of the smaller flowering type, but I think the most useful among this class is *triloba rubra*, because it blooms very freely, and supplies a colour so much wanted in hardy flowers at the present season—viz., deep red. There is also a double form

of this variety, which is perhaps the best known of all Hepaticas. A double blue form also exists, but being a somewhat weak grower it is not plentiful.—H. DUNKIN.

#### URCEOCHARIS CLIBRANI.

WHEN a few flowers of this interesting hybrid were exhibited, under the name of *Eucharis Clibrani*, at a meeting of the Royal Horticultural Society last year by Messrs. W. Clibran & Sons, Oldfield Nurseries, Altrincham, a doubt as to what should be the correct designation of the plant was expressed. The raisers inform us that the plant is the result of a cross between *Eucharis grandiflora* (better known as *E. amazonica*) and *Urceolina pendula*, and on the suggestion of Dr. M. T. Masters, F.R.S., it has been named *Urceocharis Clibrani*.

The character of the flower will be seen by referring to the engraving



FIG. 38.—URCEOCHARIS CLIBRANI.

(fig. 38) which has been prepared from a small specimen sent to us by Messrs. Clibran. The individual flowers, as will be noted, bear a resemblance to both parents. They are borne in umbels on strong stalks similar to the *Eucharis*, and, unlike the *Urceolina*, are erect on first expanding, drooping slightly when past their best. Being pure white and extremely beautiful in appearance, the flowers will prove invaluable for decorative purposes, and when a stock of the plant has been prepared it will, no doubt, be extensively grown. The leaves are broad and as vigorous as those of the *Eucharis*.

#### BRUSSELS SPROUTS.

At the beginning of the second paragraph of the paper on this vegetable, page 135 (*Journal of Horticulture*, February 16th), your correspondent writes, "I cannot understand why it is advised that



Brussels Sprouts should be sown in a frame. Plants raised under glass never have the same hardy constitution that those have raised in the open ground." Having indicated in a previous article that personal experience led me to adopt the frame system of raising seedlings is no reason why others should invariably resort to the same practice. A good rule for cultivators to follow is to base their systems of procedure on the various conditions with which they may have to deal, more especially as regards the climate and soil of their respective districts.

No one who is usually successful in securing satisfactory crops of Brussels Sprouts from plants raised in the open ground will give heed to anything that may be written in support of raising seedlings under glass; but, on the contrary, if failures occur occasionally from climatic causes they might possibly do worse. I may make the remark here that two plantations now occupying the same quarter, and raised under the different systems indicated, present a striking contrast. While those sown in the open, as soon as weather would permit last spring, have been practically a failure, those raised under glass and thoroughly hardened afterwards could scarcely have yielded a finer and more abundant crop, and their green sturdy appearance after such a rigorous winter is surely a sufficient guarantee of their hardiness. Similar results have also been noted in other gardens in the case of frame-raised plants. It would be interesting as well as instructive to know the actual temperature Brussels Sprouts should be able to withstand without injury before they could be said to possess what your correspondent considers a hardy constitution.

Regarding the question of sowing seed of Brussels Sprouts in the open in February, as practised by your correspondent, the teachings of meteorological records in this district (Ayrshire) makes the raising of seedlings under glass a necessity. Plantations from which adequate supplies of good firm sprouts are obtained here must be finally planted out not later than the 15th May, but how plants sown in the open for this purpose can make headway with the thermometer ranging from 12° to 20° of frost for a week at a time after germination should have been apparent, together with months of bleak east winds prevailing almost constantly, I have not yet proved. For this reason I adhere to a system by which protection is at immediate command when severe weather extremes have to be contended with.—BRASSICA.

### TRIUMPHS AND TROUBLES WITH PEACHES.

A SHORT time ago, no matter how, no matter where, fate brought me into conflict with a Gooseberry grower on the question of pruning the bushes. Having comfortably demolished one another, each, doubtless, deriving considerable satisfaction from the manner in which he had wrecked the other's arguments, we drifted into conversation, and the then stranger, who subsequently proved to be Mr. Reed, gardener to Edward Pettitt, Esq., Broadwater, Oatlands Park, near Walton, clinched the matter by extending, in honest English fashion, a hearty invitation to go and see him as soon as an opportunity arose. That is the way to end a controversy. No bitterness, no recriminations, but just a wholesome hand-shake and an invitation given in the best spirit, and accepted with equal readiness and pleasure. Though personally unknown to me until that time Mr. Reed's name was familiar as a successful exhibitor of fruit at leading Shows, such as the Crystal Palace, and of Chrysanthemums at Kingston, Weybridge, and elsewhere. Moreover, information had reached me of his special success with Peaches. To Walton I therefore betook me. The road was a familiar one, for Broadwater is the next place to Duneevan, rich with the Rhododendron and other treasures collected by the kind-souled James McIntosh, now gone, ripe in years and honours, to his rest. Memories of bright days in the beautiful garden of this noble old English gentleman, and of hours beguiled by his genial and kindly wisdom when his health permitted him to play the part of guide and host, are inevitably recalled when Oatlands Park is revisited.

It is a little too early in the year for the full beauty of the locality to be recognised; but late in spring there are few among the many delightful districts which are to be found in Surrey by all who know how to set about the search to exceed Oatlands Park in attractiveness. Duneevan, Broadwater, and other residences near stand on the very brink of the steep descent into the Thames Valley, and consequently the pleasure grounds slope somewhat abruptly down. I should like to pause and speak of them; but Peaches do not grow there, and so I must pass on. A brief tribute should, however, be paid to the taste and skill with which the garden has been managed, for shrubs and trees have been arranged in a manner appropriate to the configuration of the ground, and through cunningly contrived breaks and depressions pleasant glimpses of the glistening water can be obtained. Under glass the handiwork speaks for itself. There is a bright display of flowering and foliage plants, together with many Orchids, all healthy, clean, and happy.

Beyond doubt it is in the fruit department that Mr. Reed excels. The collection of Apples, Pears, Plums, Cherries, and bush fruits is large, varied, and splendidly managed. At a future date I hope to say something about them, but at present attention must be restricted to the Peaches. There are two houses, the trees in the early one now being in bloom. In both the condition of the trees repays the closest inspection. They are models of health, vigour, and skilful training. The rule followed is to remove all fruiting wood immediately the Peaches have been gathered, and in the case of only two trees was it departed from last season. The difference between these and the remainder is very marked. The summer pruned trees are furnished with as fine a frame-

work of fruiting wood as it has ever been my fortune to see. Many of the shoots are 18 inches and 2 feet long. "Gross!" someone may ejaculate. Not at all. The wood is stout, firm, with the deep brownish tint denoting perfect maturity and studded with huge plump buds, or, in the case of the early house, wreathed in fine, substantial, perfectly developed blossoms. True it is that long shoots do not always mean fine fruits, but when as stiff and well ripened as those at Broadwater they bespeak no mediocre crop. The late house is 87 feet long, the front border 5 feet wide, and the back 2 feet. Last year 1600 fruits were gathered from the structure. The knife has been used with so much judgment and boldness that the trees, save for the mere skeleton of the framework, are entirely furnished with fruitful wood, and by adherence to the summer pruning of the fruiting shoots a succession of magnificent wood is secured. In the two trees not so treated the wood is distinctly stunted as compared with the others, and a lesson is afforded of the results accruing when Peaches are intelligently managed.

In feeding his trees Mr. Reed follows lines not generally adopted. As soon as the fruit is gathered three barrowloads of dried fowl manure are spread on the borders in each house. The material is spread to dry when collected, and pointed very lightly into the borders. If wet the amount of ammonia arising would probably injure the leaves. This application lasts them until spring, when a dressing of wood ashes is applied to the borders, also to the vineries. The potash helps the fruit wonderfully at and after stoning time, and aids materially in the production of fine examples. The use of fowl manure offers a useful hint to other cultivators of Peaches. Few recognise the value of this fertiliser, which analysis shows to be far superior to animal manure. A ton of fowl manure yields 24 lbs. of potash, 41 lbs. of phosphoric acid, 87 lbs. of nitrogen, and 47 lbs. of lime, a total of 199 lbs., as against 66 lbs., the product of pig manure, which is in its turn richer than the excrements of horses and cows. Theoretically we learn from these figures that the gatherings of the fowl houses compose one of the gardener's best assistants, and the Broadwater Peaches drive home the theory in as practical a manner as could be done anywhere in the kingdom. It is to be hoped that cultivators may learn to appreciate the manure at its true worth, and make better use of it than is now often done.

I turn from the triumphs with Peaches at Broadwater—and a triumph their culture undoubtedly is—to a word as to the trials, or rather to a trial which for a time played sad havoc with the worthy gardener's peace of mind. He loves his trees, and devotes close personal attention to them. They are his delight and his pride. Conceive then of the blow that befel him when an unhappy error on the part of a junior while he was away for a holiday destroyed nearly a whole houseful. They were thoughtlessly dressed with undiluted oil, and when Mr. Reed returned home the sight when he entered the house nearly broke his heart. Like a wise man he went home to talk over the catastrophe with his wife, but her consolations did not suffice to bring peace to his troubled mind. "I hadn't a wink of sleep that night," said Mr. Reed to me, with the look of a man whose thoughts revive some sad experience. "I tossed and turned trying to think out what to do." Something was done, and done promptly. He hied him to Chelsea, and told his story to the head of the great firm there, whose sympathies, ever quick to act when gardeners or gardening are concerned, were at once aroused. Some of the finest trees from the Southfields stock were sent off. They were planted on the 11th of March, and from eight of them sixteen dozen fruits were gathered the same season, so after all the trial was turned into another triumph. Then Mr. Reed went on to tell what happened when the bill—and he speaks gratefully of the consideration for the untoward circumstance which its dimensions bespoke—came in. He was anxious to take the responsibility upon himself, not liking the idea of a good employer suffering for such a mishap, but the latter generously refused to allow it. So the trial was met, the gardener's serenity restored, and his respect for an appreciative master increased. Once more the Broadwater houses are full of healthy trees, a source of gratification and pleasure to Mr. Pettitt, of pardonable pride to his gardener, and of instruction to visitors.—W. P. WRIGHT.

### AN ELEVATED GARDEN.

RELATIVE to the surrounding ground level there are perhaps few gardens in the kingdom that are more up in the clouds than is the parterre garden that is found on the summit of the castle keep at Farnham, when that elevation is reached. The entire keep, enclosed by a stone wall of some 7 or 8 feet in thickness, seems to stand on an acre of ground. The wall reaches to a height from the lawn beneath it of some 50 feet, and is scaled on the north side by a series of stone steps, somewhat zig-zag in form. The walls up which this ascent is made are covered with wonderful masses of Ivy and Clematis flammula, and on one side of the steps is a perfect wall of Cotoneaster. The whole of the external wall is thus picturesquely dressed or draped with hardy foliage and climbers, whilst on the top are many trees of considerable size, which it is needful to prune occasionally as the wind force so high up is very great.

On the top what was, in the days of the previous Bishop of Winchester, a vegetable garden, has been converted into a sunken flower garden, nearly half an acre in extent. Inside the wall at the top runs a raised gravel walk, and the flower garden lies some 3 feet lower. It has a turf floor with two broad cross walks. Beds of Roses, herbaceous perennials, and annuals beautify it in the summer. Every piece of turf and particle of gravel as well as manure has to be hauled up by a rope to the great height from below, and it is no wonder if the work of



renovation proceeded slowly. Mr. Dowding is entitled to all praise for his perseverance under such difficulties. Water is now laid on, being supplied from a distant elevation near Caesar's camp. No wonder that apart from the garden, which must be very delightful in the summer, the look out should be a great attraction, for the views are very extensive, and embrace the whole of the surrounding country.—A. D.

## WATER.

DOUBTLESS it has often been a matter of surprise to many persons besides myself that proprietors of large establishments will go to a great expense in building and keeping up fruit houses, and that not one in a hundred will make provision for an adequate supply and the economical distribution of that greatest of all necessities in a horticultural establishment—water.

In some places, no doubt, it is a difficult matter, but in the majority of them it is an extremely simple one, and I may, perhaps, simplify it a little more by saying at the outset that you must not despise spring or hard water if that is the easiest to obtain. It will do no harm to the roots of fruit trees and may possibly do them a great deal of good. I prefer it to rain water. When I first took charge of a large garden for a nobleman I found several acres of water close at hand, but comparatively none in the garden. A horse and cart and several men were employed a good part of the summer carrying this necessity. Of course the supply was very insufficient, and it always is under such conditions. As the water was on a lower level than the garden a hydraulic ram was suggested. "Shall I be £5 a year the better off in the way of produce or expenditure?" asked my employer. I could only say I hoped so, and that failure in some respects was inevitable without a proper supply of water. Well, the hydraulic ram was fixed for the sum of £120, and it gave us an ample supply of water for all purposes. It is a recognised fact that some of the products were better than they had ever been before in that garden, and I am positive that the improvement could not have been made without the water. Now, here was a garden costing over a thousand pounds a year, and yet the few pounds that would give an ample supply of water, lessen the drudgery and worry and prevent some of the failures, had been withheld for ages.

Having got the water is a great point gained, but this is not all. It has to be distributed, and must be done in a proper condition and in an efficient manner. I maintain that the watering of inside fruit borders is such an important operation that it should never be done by any but the most trustworthy hands. You may teach a labourer to thin Grapes, disbud Peach trees, ventilate houses, crock pots, and even to do that equally important work, the stoking, because you can see at a glance whether any of these operations are properly done; but in watering, especially with the hose, he is apt to make mistakes, and the errors so made are not readily detected. Somehow the corners and ends of borders are apt to be partially neglected, and these parts, especially where there is masonry, have a habit of getting dry the quickest. Personally I seldom trust the watering of such borders to anyone but myself. Having seen that the application of water is such an important matter, it shows the necessity of making provisions for supplying it as fast as the borders can take it. If a man's time is worth a shilling an hour, he should not be allowed to waste it by holding a hose which discharges water only at the rate of 3 or 4 gallons a minute.

My present arrangements for watering, although not perfect, are better than many. The source of supply is a spring which never fails or diminishes, and is situated at a suitable altitude. A large tub holding 3600 gallons, obtained cheaply at a sale of brewery stock, is sunk in the side of the hill for storage. This is connected with all the houses by means of pipes and taps to which a hose can be fixed. In the summer time, or as soon in the spring as the water in the tub reaches a temperature of 55°, it is used direct from there. In the early spring we have arrangements for warming it, which I will attempt to describe. A little below the tub is a cistern capable of holding 400 gallons. By means of a branch pipe and tap this can be filled from the tub, and when warm the supply from the tub can be shut off and the warm water drawn in any of the houses from the cistern by the same arrangement of pipes as when it is drawn from the large tub.

For warming the water we have a small boiler fixed slightly lower than the cistern and at one end of it. The connection is made by two short lengths of 1½-inch pipe, one of these rising from the top of the boiler to act as a flow, and the return pipe enters near the bottom. The two pipes merely enter the cistern one above the other, and are open to it, so that the boiler is self-filling and can never be empty, although the cistern might run dry. We had at first one of the small upright drum-shaped boilers. This answered very well for a time, and heated the water rapidly; but the

water space being very small the sediment from the constantly changing spring water blocked it, and it burned through in two years. What we have now is a common bell-shaped laundry boiler with a lid fixed to it. It does not heat so rapidly as the former boiler, but it does the work well enough, and it has been in use five or six years.—WM. TAYLOR.

## DISCUSSION ON APPLES.

### APPLE SYNONYMS.

THERE is a mistake in my note on page 161 last week. I did not intend to suggest anything more than sending fruit, leaves, and wood of Dr. Harvey, Wormsley Pippin, and Waltham Abbey Seedling for showing they are one and the same variety. The name of Golden Noble was inserted accidentally. I think the Fruit Committee in "British Apples" (page 376), 1888, wrong in stating that Golden Noble and Waltham Abbey Seedling are identical.—JOHN CHINNERY, *The Gardens, Downton Castle*.

### APPLE WORMSLEY PIPPIN.

In a garden I was recently looking through I found Waltham Abbey Seedling grown as Wormsley Pippin, and the variety having the first appellation was something quite dissimilar and of no special merit. No doubt we may admit that Waltham Abbey Seedling is grown also under the names of Wormsley Pippin and Dr. Harvey, and the only remaining point to clear up is which name has prior claim. In any case one recognised title is enough. With respect to Mr. Chinnery's statement as to Golden Noble and Waltham Abbey Seedling at the Apple Conference of 1888 being pronounced identical, I would point out what was really done. Golden Noble was shown under both appellations, and they were pronounced identical. No body of persons ever yet described genuine fruits of the two sorts as being identical.—A. D.

### COOKING TEST FOR QUALITY.

THIS is a very interesting subject, and I hope there will be some comments on "W. B.'s" class list (page 130), or that others will relate their experiments. *De gustibus non est disputandum*, but surely it is odd that such very differently flavoured Apples as Blenheim Orange and Normanton Wondon (Wellington) should be in the same class, and that Lord Derby and Sturmer Pippin occupy the lowest place of all for flavour.—W. R. RAILLEN.

## FRUIT BLOSSOM.

THE last year's growths, twigs, and spurs of Apricot trees are studded with blossom buds ready for expanding, and the time for affording protection is at hand. Pears have the most blossom buds, bold and promising on the first-formed spurs on the two-year-old wood. Young trees, or those extending, have by far the grandest display of buds. Restricted trees show many blossom buds so close together, and so variable in size, as to suggest a liberal thinning. This is easily done by dividing them into three sizes—the small, medium, and large, removing all the first, most of the second, and retaining the large bold buds. If there be sufficient of the latter for leaving evenly over the tree at a handbreadth apart, all the other buds may be rubbed off, for there are five times too many for insuring a good set and fine fruit. Where the trees on the Pear stock are closely pruned there is only a sprinkling of blossom buds on spurs from wood over four years old. Such trees grow fine shoots to be cut away in summer, these often producing the sole crop. Some trees have last year's growth terminated by bold blossom buds, and such branches must be cut back to wood buds if an extension of growth is needed.

Cherry trees are clustered all over with buds, and half may be removed with advantage. Some trees produce nothing but blossoms and leaves year after year. Thinning the blossom prevents the trees expending all their energies on beautiful abortions.

Plum blossom promises to be abundant, especially on young trees with the branches thinly disposed. Peach trees have plenty of blossom buds just moving, but they will not take any harm until the pink or crimson petals have burst the integuments that hitherto have protected them. All the trees are not alike promising. Some strong-growing sorts do not mature the wood sufficiently for setting good crops. None has done better than Dr. Hogg Peach in the past, and it is more favourable for fruit production this year than any other variety on a hundred yards run of south wall.

Our national fruit, the Apple, especially the early varieties, give great promise of blossom on garden trees, all on the English Paradise stocks, while many trees in orchards teem with fertility. What we wish to see are clean, healthy, open trees in fertile soil, for these produce the boldest blossoms and the finest fruit. Overcrowding is fatal to productiveness. This Shakespeare knew, or he would not have written

"All superfluous branches  
We lop away, that bearing boughs may live."

Let his words be remembered. On another occasion I will describe methods of protecting the blossoms of fruit trees.—G. ABBEY.

PERHAPS it is too early in the season to say much about the fruit prospects of 1893, but to judge from the appearance of the trees in this district there is every indication of there being good crops if the weather



should prove favourable during the time they are in flower. The mild weather of the last few weeks has brought forward the buds of Apples, Pears, and other fruits very rapidly—perhaps too much so for the season—and they may have to suffer for it later on if we have a spell of severe weather with cold east winds during the time the flowers are setting. I went round and inspected most of the fruit trees in the gardens here to-day (February 23rd) and found them bristling with flower buds from base to top, strong, plump, and considerably advanced for this early date.

The buds of Pear trees trained on south walls are almost ready to burst into flower, and as a slight protection against frost I had them covered with old fishing nets. The pyramid Pear trees in the open quarters are not so easily protected when 30 feet high, so they must take their chance. Pitmaston Duchess I never saw so studded with flower buds all over and so forward at the present time. It makes a beautiful pyramid on the free stock, has a strong constitution, and fruits freely here planted in different positions. But the fruits are so large and heavy that the trees require propping to keep the branches from being swayed about with the wind and shaking the fruits off. Notwithstanding the great height of the trees, many of them bear so low that the fruits are sometimes resting on the ground. Glou Morceau is a late variety, and not quite so forward in bud as the former. It has a pendulous habit of growth, and succeeds well as a pyramid in this locality, and the fruits are not easily blown off the trees. Williams' Bon Chrétien (a

flower buds this year as usual, but there is plenty if the weather should prove favourable to produce a good crop.

Gooseberry and Currant bushes are almost green, and promise an abundant crop.—A. PETTIGREW, *Cardiff*.

It is yet the end of February and the scales have fallen from the blossom buds of Pears in the Thames Valley, and the buds on early flowering trees have a whitened aspect. Such development is sufficient to create alarm. Well may we be thankful for some recent cold days, but there seems to be little prospect of any material check, as the weather continues if not particularly mild, at least moist and open. It may be that so long as the flowers are kept from expanding until the end of April, and that is always warm enough even for Pears, no great harm may be done; but all the same, every fruit grower knows that early starting of the buds, and then because of ungenial weather and low temperature very prolonged expanding, is weakening and greatly militates against fertility. It is a case in which human agency, however skilled, can do nothing.

What we see, especially on Pears, is a superb promise, as the trees generally are thickly studded with blossom buds. The crop last year was a moderate one, and there is good reason to hope, should no harm result from ungenerous spring weather, that we shall have a fine Pear season.

Apple trees, too, are on the whole well set with buds, though many



FIG. 39.—MANGOLD WURTZEL TRAPS FOR WOODLICE AND MILLIPEDES.

A, wood-louse (*Oniscus asellus*), full size; B, pill-millipede (*Armadillo vulgaris*), rolled up as a ball; C, snake millipede (*Julus pulchellus*), magnified, *a* natural size; D, upper half of Mangold; E, lower half of Mangold; F, woodlice feeding on hollow part of Mangold.

great favourite) is so straggly in its growth that it does not make a good pyramid, even with the best of treatment. The buds are prominent, and if this mild weather last much longer it will soon be in flower. It crops well in this district, both on walls and in the open quarters of the garden; but, like the Jargonelle, the fruits soon decay after they are ripe. Beurré d'Amanlis, Marie Louise, Beurré Magnifique, and Louise Bonne of Jersey are looking well and full of bud. These varieties make good pyramidal trees, and fruit freely, with the exception of Marie Louise, which is rather uncertain some seasons. Beurré d'Amanlis is a sure bearer, robust in constitution, and is one of the best kinds I know for renovating inferior varieties, or varieties that are too tender to succeed in the open by grafting them with it. We had a row of very fine pyramidal trees of Easter Beurré growing in a border by the side of one of the principal walks in the kitchen garden here. They bore well enough, but never ripened their fruits satisfactorily, so I had them headed down, or rather the branches shortened back to within a foot or more of the main stem to form a framework for the grafts, and as many as thirty or forty scions of Beurré d'Amanlis were put on to each tree. It is only two years since they were worked, and now they are well furnished, and have all the appearance of established trees from sixteen to seventeen years old, showing plenty of fruit buds. Last year I had some large pyramid trees of Bergamotte Esperen cut back in the same way, and grafted with Beurré d'Amanlis, which will soon make well furnished trees.

Apple trees are clean and healthy and better furnished with fruit buds than ever I remember seeing them. The buds are swelling fast, and some of the earliest varieties are beginning to open and show a tinge of red on the top. The trees of Cox's Orange Pippin, Blenheim Orange, Ecklinville Seedling, Lord Suffield, Wellington, Annie Elizabeth, Beauty of Hants, and Golden Noble could not look better than they do at present, but a hard night's frost might blight the best of prospects with the buds so far advanced at this early date.

Peach trees are covered with strong healthy flower buds which are almost ready to burst into blossom with the first few hours' sunshine. The walls here have a broad stone coping which project some 9 or 10 inches over with iron hooks in it, from which fish netting is hung, and fastened at the bottom to stakes driven into the ground 3 feet from the wall to prevent it from being blown against the trees and injuring them. Plum trees were very much blighted last year, and are not so full of

which cropped heavily last year are less promising. Still, we may well look for a good Apple crop. Other hardy fruits also are well set with buds. Oh, for a cool dry March that shall keep all these buds in check, and once into April we may feel that our fruit crops will be safe.—A.

### TRAPPING WOODLICE.

I SHOULD like to bring a simple method of catching woodlice to the notice of Orchid and Fern raisers, also to raisers of Tomato plants and growers of Mushrooms. Last year when we planted Tomatoes we were troubled with wireworm, so placed small pieces of Mangold Wurtzel as traps. When looking for our enemy we found them covered with woodlice. This year we raised 20,000 Tomato plants, and found the woodlice eating off the young plants, so we procured twenty Mangold Wurtzels, cut them in halves, scooped out the middle, and laid them down under the stage. We caught 500 woodlice at a time in one hollowed root—a pailful of pests in one house in a week.—W. WOOD, *Sidcup*.

[Our correspondent has done well in directing attention to this means of enticing woodlice. It is not new, though little known. We have found it excellent for clearing Strawberry plantations of snake millipedes, also the large millipede (*Julus terrestris*), and it is a good trap for the small slugs that are too often found inside ripe Strawberries. The traps should be placed near the plants in good time not later than the flowering period, examining them daily, and changing their positions occasionally. Beetles also seem to relish Mangold Wurtzel, at least they lurk in the hollows of the traps.]

### TRADE CATALOGUES RECEIVED.

P. Barr & Son, King Street, Covent Garden.—*Hardy Herbaceous Perennials*.

Ketton Frères, Luxembourg.—*Roses*.

J. R. Pearson & Sons, Chilwell Nurseries, Nottingham.—*Show and Zonal Pelargoniums, &c.*

T. S. Ware, Hale Farm Nurseries, Tottenham.—*Hardy Perennials Florists' Flowers, Climbing Plants, Primulas, &c.*





## HARDY FRUIT GARDEN.

**Planting Fruit Trees.**—When spring planting of fruit trees is necessary the first opportunity of doing the work should be taken. Deep digging of the ground is advisable where trees and bushes are to be planted somewhat thickly for furnishing the space at once, thinning out being intended when required. On ground thus prepared the trees for permanently occupying the site may be planted at the usual distances, the ground between to be temporarily filled with bush fruit. Isolated specimens will require stations preparing 6 feet in diameter, or a little less, according to the size of the trees. Deep digging or trenching is only advisable on well-drained ground, whether rendered so by natural or artificial draining. On wet cold soils with damp adhesive subsoils it is better to leave the bottom undisturbed, and to provide a better and warmer root-run above rather than below the surface. The conditions thus secured in unfavourable situations will conduce to satisfactory growth, which may be expected to become properly ripened.

**Obtaining the Trees.**—The best forms of trees for planting in spring when they have to be obtained from a distance are maidens, two-year-old trained and partly formed bushes of this age being suitable. Larger and older trees, well prepared by preliminary liftings to keep the roots at home, move readily from one part of a garden to another, as a quantity of soil can be taken with them, and the removal and planting expeditiously carried out. It is important to preserve as many young fibrous roots intact as possible. Nurserymen as a rule carefully pack the roots of fruit trees in moist material as soon as possible after lifting, thus insuring the trees being delivered to their customers in a proper manner for planting. This must be followed up by the prompt action of the planter in transferring the trees to the quarters intended for them. Should that not be practicable at the time carefully lay the trees in, or keep them in a cool place with the packing material around them. Every care taken of the roots is amply repaid. Trees arriving in a dry state at the roots must undergo resuscitation by plunging them both root and branch into a pond for some hours.

**Hints on Planting.**—The greatest care is required in planting trees and bushes when no soil is attached to the roots. The first requisite is to have the holes wide enough and of such a depth that the uppermost roots will not be covered more than 3 or 4 inches. Wide holes admit of the roots with all their attendant fibres being regularly laid out in a horizontal position. Work among the latter some fine loamy soil, spreading it from the stem outwards, so that each rootlet is encouraged to lay in its proper position. Soil placed heedlessly on the fibres is apt to reverse their points, causing them to grow inwards. Cut all bruised roots smoothly, and remove injured portions. New fibres will issue from smoothly cut roots much sooner than they possibly can from mutilated or jagged extremities. Trees also establish themselves quicker, and better growth follows.

**Treatment after Planting.**—All trees not able to resist swaying by the wind must be securely staked and tied in such a manner that they can subside with the soil. Mulch the surface over the roots with strawy manure or partially decomposed leaves. Heavy decayed manure is not desirable, as it is too close and heavy. The object of the mulching is not to afford sustenance, but rather to conserve the moisture in the surface soil, while affording opportunity for the natural heat to pass through and warm it.

**Pruning.**—This is a matter claiming some judgment. Autumn planted trees will require leading branches to be shortened in proportion to the treatment the roots received. Shortening them to half length usually suffices, lateral growths being cut in to a few buds. Maiden trees, if intended to be grown into trained specimens, must be shortened to a length of 12 to 15 inches from the junction of stock with scion. The number of branches it is intended to take the first year, will, however, afford some guidance. Trees already formed into shape will need but little shortening, especially if the fibrous roots were preserved at planting, and those equally distributed; but if large reductions were made the branches must be shortened to correspond, or unsatisfactory growth will follow. Lifting and transplanting trees with good balls of roots from one part of the garden to another will necessitate no pruning as regards shortening. Weak and crowded wood may be cut out, and rambling roots of a fleshy character curtailed.

**Protection for Wall Trees.**—Moveable protective material should be fixed in good time. Roller blinds or sliding arrangements of tiffany, scrim or canvas, often prove as useful for retarding trees coming into blossom as they do for preserving it and the young fruit from injury. Protection is also needed at times on account of the havoc made by birds, which destroy the buds of Cherries, Plums, Pears, and other fruit trees. Fish nets, however, are best for this purpose.

## FRUIT FORCING.

**Peaches and Nectarines.**—*Earliest House.*—Now the fruit is stoning the temperature must be kept as equable as possible. Too high a temperature, especially at night, is not favourable to the process, and sudden fluctuations often causes the fruit to drop wholesale. The

temperature should be continued at 60° to 65° at night in mild weather, 55° to 60° when severe; 60° to 65° on cold dull days, 65° to 70° when mild but sunless, 70° to 75° with a gleam of sun, ventilating early and freely under favourable climatic conditions. Thinning the fruit must be seen to, not allowing twice as many fruits to stone as are to be left for the crop, but a few more than the required number should be retained to meet casualties in stoning. One fruit to a square foot of trellis covered by the trees is a fair apportionment; small-fruited varieties may have the fruit left a little closer, and vigorous trees will carry more than weakly trees. Overcropping, however, must be strictly avoided. Nectarines require the same space as Peaches to have fine fruit. Secure all the shoots to the trellis as they advance in growth, stopping any that are likely to exceed 12 to 15 inches at those lengths, and if the pinching results in laterals stop them at the first leaf. Shoots retained to attract the sap to the fruit should be stopped to one leaf. Extensions should be trained in their full length, pinching laterals at one joint as made. Syringe the trees in the morning and afternoon when the days are fine, but damping available surfaces will be sufficient in dull weather, with an occasional forcible syringing, to keep red spider under. If the pest gains a footing extirpate it by the prompt application of an approved insecticide, or a solution of softsoap, 2 ozs. to a gallon of water. Inside borders must be duly supplied with water or liquid manure in a tepid state, but avoid over-stimulation whilst the fruit is stoning.

**Second Early House.**—Disbudding must be proceeded with gradually, and the successional bearing shoots should be laid in as soon as they are sufficiently advanced in growth. Thinning the fruit must be attended to as soon as the remains of the flowers are cast. Remove all twin fruit, the smallest, that on the under side of the branches, and the badly placed, leaving three on a branch of 12 inches length, to be afterwards reduced to two on a strong and one on a weak branch when of the size of marbles. Only one fruit as a rule should be left on each bearing shoot, but two may remain if there be a deficiency in other parts of the tree. The fruit will rapidly swell to the size of small Walnuts, the temperature by that time having been increased to 55° to 60° at night, 60° to 65° by day from artificial heat, and 70° to 75° from sun heat, with a free circulation of air from 65°, avoiding cold and drying currents. Syringing the trees twice a day in bright weather, and occasionally in dull weather, with damping the floors once or twice a day will keep red spider under, and maintain a genial atmosphere.

**Succession Houses.**—Trees now in bloom require a free circulation of air, or such as will keep the atmosphere buoyant with sufficient fire heat to prevent sudden depression of temperature, maintaining 50° at night or a few degrees less on cold nights. A temperature of 50° to 55° will be suitable in the daytime, advancing to 60° or 65° from sun heat with free ventilation. Shake the trellis or trees occasionally to distribute the pollen, or preferably, pass a camel's-hair brush or feather over the flowers that have ripe pollen once a day, and give extra attention to the shy-setting varieties by conveying pollen from others that produce it in abundance, as for instance Royal George and Stirling Castle Peaches, also Elruge Nectarine. Keep the paths well damped on fine days, and be more sparing of water when the weather is dull and cold.

**Late Houses.**—The roof lights need not be put on until the buds show the silvery integuments that envelope the floral organs, but they are not safe after the blossoms show colour. Trees under fixed roofs are more forward, the buds being in various degrees of expansion. Where syringing has been practised it must be discontinued as soon as the anthers show clear of the corolla, but damp the floor in the morning and afternoon, leaving a little air on constantly at the top of the house. No more fire heat should be used than is absolutely necessary, but after the flowers show the stamens a certain amount of warmth is needed, for when the atmosphere is cold and moist, and the flowering extends over a considerable period, the fruits do not set well; therefore, after the blossoms open maintain a temperature of 40° to 45° at night, 50° to 55° by day artificially, with a free circulation of air, advancing to 65° with sun. In the case of weak trees having a superabundance of blossom it is advisable to remove the flowers from the under side of the shoots or the back, as the trees may be against front or back trellises. The borders should be kept healthfully moist.

**Figs.**—*Earliest Forced Trees in Pots.*—The fruits will soon have completed their first swelling, and they then remain apparently stationary for some time. This is the most critical stage in their culture, and every care must be taken not to give a check, whether caused by excessive heat or want of moisture. In mild weather the temperature may be kept at 60° to 65° at night, but if cold 5° less will be found safer. Progress is best made in the daytime by closing with plenty of heat and moisture, a rise being indulged in of 10° to 15° without producing a weak or elongated growth, keeping through the day with gleams of sun at 70° to 75°. Red spider must be kept under by copious syringing on all favourable occasions. Afford a steady supply of liquid manure to the roots, as Figs in full growth require generous support, and can hardly be over-watered, provided the drainage is thorough.

**Succession Houses.**—Crowded growths must be thinned, but they are better prevented by disbudding, leaving no more shoots than space permits. Where extension or successional growth cannot be allowed the shoots may be pinched at the fourth or fifth leaf to form spurs, these giving good results in the second crop; but avoid crowding as the greatest of evils. Syringe the trees twice a day, and keep the borders well supplied with tepid diluted liquid manure.

**Young Trees in Pots.**—Those intended for next year's forcing should



be shifted into larger pots, and be placed in or over bottom heat. The compost may consist of good yellow loam, with a sixth of old mortar rubbish and a sprinkling of crushed bones, say a 6-inch potful to a bushel of loam. Provide good drainage, pot firmly, and do not let the shift exceed 3 inches in diameter that of the previous pot. Shade slightly from bright sunshine for a few days until the roots have taken to the new soil, when the trees should be fully exposed to light and sun. Pinch the growths at about four leaves to induce a bushy habit.

**Cherry House.**—The main art in forcing Cherries is attention to the ventilation; a free circulation of air should pass through the house whenever the temperature exceeds 50°, the amount of air being regulated by the condition of the outside atmosphere. Fire heat need only be employed to prevent the temperature falling below 50° in the day-time, and to maintain a night temperature of 40° to 45°. Attend to fertilising the blossoms with a camel's-hair brush or a feather. Aphides generally appear just as the trees set their fruit. They must be destroyed, or they will ruin the growths and spoil the Cherries. Grubs also infest the foliage; one kind of caterpillar rolls itself up in the leaves, and can be extirpated by squeezing; but another encases itself in a web on the under side of the leaves, and they appear as if scalded, and from the foliage the pest makes its way to the fruits and devours them. The surest means of riddance is to examine the trees occasionally and destroy the grubs.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### THE WEATHER.

WE have had slight showers of hail and snow, inclining to frost, the lowest temperature for the month being 25° on the morning of the 24th, and the highest 55° on the 19th, thunder being heard in some places. On that day, the 19th, the bees gathered pollen from the various flowers in bloom, and in quantity where the Hazel catkins were profuse. Upon the whole the bees have been kept more within the hives than during any February for many years past. This, according to weather prophets and old saws, augurs well for a fine summer, and I hope we shall have one.

#### APPLIANCES.

These should be overhauled and put in good order, so that when required there will neither be necessity to search for them nor to put them into condition when there is not time to spare to do so.

#### INTERCEPTING SWARMS.

When I described my swarm interceptors I omitted to say that light, handy, and easily made ones may be constructed of wire cloth; if necessary line with calico on the principle of the swarm catcher and hiver, or they may be made with wire crown cloth lined with calico. They are handy swarm catchers and hivers in all situations.

#### YOUNG BEES.

In hives with youthful queens young bees are now numerous, and are the best for early work. The wide-awake bee-keeper will not tolerate queens older than those of the preceding year; but occasionally circumstances may have prevented the alternative, yet these need not be kept in the apiary longer than May. By that time young queens can be easily bred and fertilised in time to supersede aged ones, and with extra breeding space are the best and only means to prevent swarming in storified hives. Hives properly managed on the swarming system, where the honey season does not commence before the middle or last week of June, are by far the most profitable; besides, there is no risk of a hive collapsing as a non-swarming one with a worn out queen frequently does. Only last year "W. B. C." said in the "Record" that swarms of the current year were profitless, or words to that effect. That teaching may please novices, but practical bee-keepers smile at the absurdity. Our first swarms are those on which we depend for large yields of honey of the finest quality, provided the bees issue several weeks before or at the beginning of the honey flow. In the event of the queen of a swarm relaxing in egg laying at a time that would affect late honey gathering I depose her, and introduce a young but fertile one as early as possible. My safety cage shows at a glance whether it may be safe to release her or not. Many claims have been laid to "direct introduction," but the fact remains that the term is misleading. There is no safe method of direct introduction. The queen regnant must first be deposed, and the bees have time to realise their loss before it is safe to allow an alien queen in their midst.

#### VARIETIES OF BEES.

It would be very interesting as well as instructive were bee-keepers to note the various characteristics of their bees, their

faults or failings, as may be observed throughout the year. I have no hesitation in affirming that the Carniolan is the hardiest of any race of bees; also mild in temper, as well as good and cleanly in storing honey. Strongly do I wish also that some of those renowned bee-keepers who have said so much against Punics were here in a good honey flow to witness the energy of these maligned bees. I hope we may have several honey days in succession the coming summer to test the pure ones. Syrians, like the crossed Cyprians, have also proved good honey gatherers. I have not fed mine for years. The large gathering of 33 lbs. in one day was by crossed Syrians.

#### FASTENING COMB FOUNDATION.

One thing I have omitted to say. Where foundation is fixed with wax in a groove or between a split bar the work may be performed at any time; but where it is done by pressure it is better to postpone the fixing till near the time it is wanted. If done earlier the movement of the wood by contraction, and the absorbing of damp, causes the foundation to part from the bar or section. This causes extra labour, and if unobserved crooked combs.—A LANARKSHIRE BEE-KEEPER.



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Clivias (G. F.).**—You do not say with what object you have sent the truss and foliage. We can only say that they represent good cultivation. You have evidently a good form of *C. miniatum*, but some of the newer varieties have much larger and better shaped flowers.

**Double Primulas (John Laing & Sons).**—You ask if we do not think the seedling Primulas good. Though the cotton wool extracted moisture from them, and thereby caused a shrinking of the blooms, we could still perceive they were very good, not semi-double, but full rosettes in pleasing colours, white, blush, pink, and rich carmine.

**Removing Mushroom Beds (Humber).**—It is certainly unfortunate, after waiting so long for Mushrooms, that you should have to leave the beds for someone else to enjoy the crops now appearing. As the beds on the shelves can be removed bodily, and they appear to be worth the trouble of transport, we see no reason why you should not carry out your novel proposition. We suspect it would be the first instance on record of transplanting Mushroom beds. Breaking up the beds and removing the materials for use again would be more likely to result in complete failure than even partial success.

**Manure for Mushrooms (E. M.).**—The ammonia which you wish to preserve is retained in the judicious preparation of suitable manure, as is evident by the bountiful crops of Mushrooms that so many persons obtain. Throwing manure in too large heaps and allowing it to heat violently, then turning it over and over again to cool, is the best method of dissipating ammonia and spoiling the material for Mushroom growing. The manure should not heat violently but ferment gently, and ought only be turned till the effluvium ceases to be offensive; it should be pungent yet not unpleasant, then if moist enough for steady fermentation to continue its condition will be right for the purpose in question; but excessive moisture is pernicious.

**Constituents of Plants (J. H. E.).**—If you could obtain what you ask for, "the constituents of each of the various fruits and vegetables grown in this country," you would be more bewildered than benefited in respect to providing manure for them on that basis. As a matter of fact, analyses vary in accordance with the constituents of soils, and before you could with exactitude compound a manurial mixture the most appropriate for each fruit and vegetable you would also have to obtain a quantitative analysis of the particular soil in which each is intended to be grown. Some soils naturally contain more of some particular plant requisite than others do, and the variation is often very great over a small area. Manuring on the basis of an analysis of plants or crops alone may result in waste. For instance, potash might be shown as the leading constituent of a plant or crop, and at the same time the soil may contain infinitely more potash than the plant or crop can possibly use. Obviously, then, to spend money on more would



be to waste it, and an outlay in phosphates might be far more profitable. Experiments conducted over and over again have shown that suitable additions of nitrogen, potash, and phosphates are sufficient for producing maximum crops of all kinds under otherwise good practice in cultivation; and in the absence of essential cultural details, apart from manuring, storing the soil with exactly what crops need, may have no profitable result. If you can enable us to comprehend the nature and condition of your soil, and the crops you desire to grow, we think we can give information that will enable you to use chemicals reasonably, as well as farmyard manure.

**Measuring Trees (A Young Gardener).**—You are right; the art of measuring trees is not so well known amongst young gardeners as it ought to be, and we have pleasure in advising you and other inexperienced readers as to how it may be done. Mr. Harding, the gardener at Orton Hall, near Peterborough contrived the simple home-made appliance shown in the accompanying illustration (fig. 40), and by adopting this means one can ascertain the exact height of Conifers and other trees. The tree measurer on the right of the figure consists of a staff 6 feet long pointed for pressing into the ground. To the centre of the staff a piece of half-inch board 12 inches wide and exactly square is affixed with screws. The diagonal cross lath is 3 feet long and perfectly straight. It may be fixed or moveable; if the latter, a small

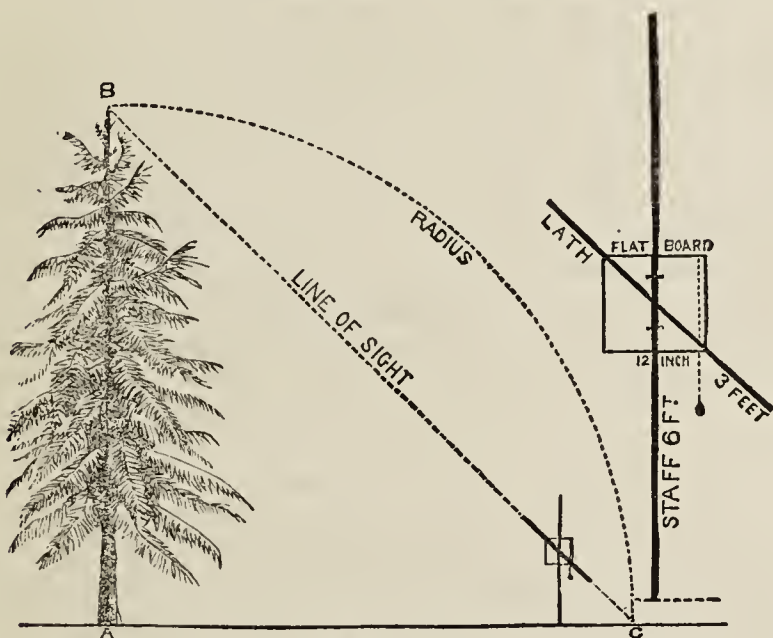


FIG. 40.

batten being screwed on the board for it to rest on when in use. The plumb line is indispensable, as no correct measurement could be had without it. The plumb-bob may be about the size of a small Walnut, the string passing through its centre, then knotted to make all secure. In measuring the tree the staff is placed at a distance from it so that with the plumb exactly perpendicular, the cross lath points to the top of the tree, the person taking the "sight" resting on one knee or reclining to bring the eye to the bottom of the lath. The lath is then drawn to the ground, where the end rests at C in the figure, or if the lath is fixed a string will answer the purpose of extending the sight line to the ground. From this point C to the centre of the trunk, not the face of it nearest the point, but the middle, will represent the actual height of the tree; or to put the matter concisely, the horizontal line, A C is equal to the vertical A B; and if the tree were blown or cut down its top would follow the course shown by the curved line and rest at C. If a tree has several leaders, as *Pinus excelsa* and some others often have, the sight should be taken of the most central one, or nearest in perpendicular with the roof of the tree, not a side branch that may happen to be a little taller, as the base line would then not give the true height of the specimen. On level ground it is easy to perceive that altitudes of a number of trees can be quickly ascertained. When the ground is irregular provision must be made for having the line level from the root of the tree, or A in the figure to C. The central board, it may be repeated, must be a true square, the perfectly straight sighting lath resting across it exactly from corner to corner, as the least deviation will lead to error, and the weight must hang positively plumb, as not otherwise can the measurement be accurate. Any handy man can make an appliance of this kind.

**Cordon Pears (J. B.).**—You have overlooked exactly what you wish to know. The pruning is not only described but illustrated in Wright's "Fruit Essay" (see pages 95 and 96). The trees will answer very well trained to stakes along the sides of garden walks. We know of hundreds so grown forming lines of fruitful cordons 9 feet high—the trees planted about 2 feet asunder or a little less. Do not shorten the leader except it terminates in a fruit bud, in which case cut back to a wood bud. The side growths may be shortened now, as the few there are can exert no material influence in the promotion of roots. You would find Wright's "Primer of Horticulture" useful, this principle of pruning being shown in connection with cordon Gooseberries on page 105. Your letter arrived too late for insertion this week, as our pages had to be made up earlier than usual, to afford the printers time for producing the extra large number of copies required at the hour of publication.

**Arrears of Wages (J. W., Gardener).**—We could better understand the case if you had sent copies of the letters on which the engagement was based. If we comprehend what you wish to know chiefly it is this: "Whether you can retain possession after the expiration of a notice to leave that may be served on you by an employer on the grounds that the said employer is in arrears in paying your wages?" If that is your question we suspect that the fact of money being owing to you by your employer and landlord, does not debar him from ejecting you at the expiration of the term of a proper notice to leave. Your remedy is to sue for the arrears, and this you can do at any time, either before or after leaving your situation. The case as you state it is, we hope, a very rare one.

**Duties of Gardeners (J. S. B.).**—As you are evidently a young man without experience in, as you say, a "large" garden, the very best way in which you can obtain the information you seek is by obtaining employment, not so much in a very large, as in a moderate sized garden where most of the duties of a gardener are carried out well. You cannot possibly learn from books what a good gardener can teach you. Strive for a situation under one, then be obedient, punctual, observant, diligent, obliging, and industrious. These are the first cardinal duties of a young man, and after he has had a little experience he will be the better able to comprehend the teachings of books. In the meantime read attentively the *Journal of Horticulture*, and file the copies for future reference. You will then soon have a valuable store of information on almost every subject in connection with gardening.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (G. F.).—*Cattleya Trianae rosea*, very poor form indeed.

#### COVENT GARDEN MARKET.—MARCH 1ST.

Supplies more limited, causing a slight rise in prices, more particularly of Grapes.

##### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, half sieve .. ..	1	0	to	3	Lemons, case .. ..	10	0	to	15
" Nova Scotia, per					Oranges, per 100 .. ..	4	0		9
barrel .. ..	12	0		17	Peaches, per dozen .. ..	0	0		0
Cobbs, Kent, per 100 lbs.	0	0		0	St. Michael Pines, each ..	3	0		6
Grapes, per lb. .. ..	1	6		3					

##### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Kidney, per lb. ..	0	6	to	1	Mustard and Cress, punnet	0	2	to	0
Beet, Red, dozen .. ..	1	0		0	Onions, bunch .. ..	0	3		0
Carrots, bunch .. ..	0	4		0	Parsley, dozen bunches ..	2	0		3
Cauliflowers, dozen .. ..	2	0		3	Parsnips, dozen .. ..	1	0		0
Celery, bundle .. ..	1	0		1	Potatoes, per cwt. .. ..	2	0		5
Coleworts, dozen bunches	2	0		4	Salsafy, bundle .. ..	1	0		1
Cucumbers, dozen .. ..	5	0		7	Scorzonera, bundle .. ..	1	6		0
Endive, dozen .. ..	1	3		1	Seakale, per basket .. ..	1	6		1
Herbs, bunch .. ..	0	3		0	Shallots, per lb. .. ..	0	3		0
Leeks, bunch .. ..	0	2		0	Spinach, bushel .. ..	3	0		3
Lettuce, dozen .. ..	0	9		1	Tomatoes, per lb. .. ..	0	2		0
Mushrooms, punnet .. ..	0	9		1	Turnips, bunch .. ..	0	3		0

##### PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to	12	Foliage plants, var., each..	2	0	to	10
Aspidistra, per dozen ..	18	0		36	Genista, per dozen .. ..	9	0		15
Aspidistra, specimen plant	5	0		10	Hyacinths, dozen 'pots ..	8	0		12
Azalea, per dozen .. ..	24	0		42	Lily of the Valley, dozen				
Cineraria, per dozen .. ..	8	0		12	pots .. ..	12	0		18
Cupressus, large plants, each	2	0		5	Lycopodiums, per dozen ..	3	0		4
Cyclamen, dozen pots ..	9	0		18	Marguerite Daisy, dozen ..	6	0		12
Dracena terminalis, dozen	18	0		42	Myrtles, dozen .. ..	6	0		9
" viridis, dozen .. ..	9	0		24	Palms, in var., each .. ..	1	0		15
Euonymus, var., dozen ..	6	0		18	" (specimens) .. ..	21	0		63
Evergreens, in var., dozen	6	0		24	Primula, single, doz. pots	4	0		6
Ferns, in variety, dozen ..	4	0		18	Solanums, per dozen .. ..	9	0		12
Ferns (small) per hundred	6	0		8	Tulips, dozen pots .. ..	6	0		9
Ficus elastica, each .. ..	1	6		7					

#### AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

##### Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Anemones (French), dozen					Mignonette, 12 bunches ..	3	0	to	6
bunches .. ..	2	0	to	3	Mimosa, French, per bunch	1	0		1
Arum Lilies, 12 blooms ..	1	6		3	Narciss, var., French, dozen				
Azalea, dozen sprays ..	0	6		1	bunches .. ..	3	0		6
Bouvardias, bunch .. ..	0	6		1	Orchids, per dozen blooms	3	0		12
Camellias, doz. blooms ..	1	0		3	Pelargoniums, 12 bunches	8	0		12
Carnations, 12 blooms ..	2	0		4	Pelargoniums, scarlet, doz.				
Chrysanthemums, dozen					bunches .. ..	5	0		8
bunches .. ..	4	0		9	Primroses, dozen bunches	1	0		3
Daffodils, double, dozen					Primula (double) 12 sprays	0	9		1
bunches .. ..	3	0		9	Roses (French), per doz. ..	2	0		6
Daffodils, single, dozen					" boxes, 100 .. ..	5	0		8
bunches .. ..	4	0		12	" (indoor), dozen .. ..	2	0		4
Eucharis, dozen .. ..	3	0		6	" Red, per doz. blooms ..	3	0		9
Gardenias, per dozen ..	6	0		12	" Tea, white, dozen .. ..	1	6		3
Hyacinth Roman, 12 sprays	0	6		1	" Yellow, dozen .. ..	4	0		6
Lilac, white, French, per					Snowdrops, dozen bunches	1	0		2
bunch .. ..	3	0		5	Tuberose, 12 blooms .. ..	1	0		1
Lilium longiflorum 12					Tulips, dozen blooms .. ..	0	6		1
blooms .. ..	6	0		9	Violets, Parme, French, per				
Lily of the Valley, dozen					bunch .. ..	2	0		3
sprays .. ..	0	6		1	Violets, Czar, French, per				
Maidenhair Fern, dozen					bunch .. ..	1	6		2
bunches .. ..	6	0		9	Violets, Victoria, French,				
Marguerites, 12 bunches ..	3	0		6	dozen bunches .. ..	1	6		2





### SPRING CROPPING—POTATOES.

UNDER good management this is so profitable a crop that it should be cultivated much more extensively near every large town than it is, or we might add, on farms within reasonable distance of a town or railway station in view of a prompt and profitable disposal of it. If it answers to grow Potatoes for the London market in Scotland, it certainly ought to do so in southern or midland farms. Many a farm do we know with every advantage of soil and situation where Potato culture never enters into the general scheme of cropping, and yet a field or two of Potatoes would certainly prove a profitable investment. It is probably owing to the risk of loss from disease that the ordinary farmer so seldom attempts growing more Potatoes than are required for his household, and so it has come to pass that certain districts have a monopoly in the supply of home-grown Potatoes. Custom rules in this as in most other things affecting farm management, and in the great corn-growing districts there are very few farmers who have turned to such things as Potatoes, fruit, or butter to help them in their need. How they cling to corn is shown by the fact of some 17,000 acres more land having been under Wheat in 1892 than in 1891 in the counties of Lincoln, Norfolk, and Suffolk.

Notwithstanding the reports of much land out of cultivation in Essex, many of the farmers in that county do better devoting part or the whole of their land to dairy farming, or to the cultivation of fruit and vegetables. It was here that we saw heavy crops of Beauty of Hebron Potato lifted for market while the haulm was quite green last summer, and the planting of successional crops of green vegetables for winter and spring use. There was no loss from disease simply because the crop was cleared and sold before disease could touch it. No better sort of Potato than Hebrons could be had for such smart practice. Well was it described in the report of the Woburn experiments on Potato disease last year as a "good early cropper, clean skin, shallow eye, very saleable." Be it remembered this applies to it as a field Potato, which answered admirably under ordinary conditions of culture, when Myatt's Ashleaf growing beside it was comparatively a failure.

Beauty of Hebron, Reading Giant, and Emperor are among the best early, intermediate, and late sorts, in the order they are named, for field culture. They are all heavy croppers, and full crops are quite certain to be profitable if heavy losses from disease can be avoided. That this can be done by the timely and persistent use of bouillie bordelaise appears probable, and the outlook for Potato growers seems brighter than it has done for many years. The chief points requiring attention are soil well tilled and well manured; seed of medium size, carefully selected, and so managed that it sustains no loss of vigour from premature growth before planting; the prevention of loss from disease, and the judicious sale of the crop. Deep, rich, alluvial soil, like that in the fens, may be best; but we have had very heavy crops in soil that is naturally poor and thin on the Hastings sand formation, and are bound to regard all sound loam and mixed soils as well adapted for the successful cultivation of this crop. There must be no placing of the seed Potatoes in heaps during the winter, or there will be much abortive growth. Many a heap have we seen opened at planting time with long, slender, white growth from the tubers interlacing the whole mass, representing just so much wasted vigour. It must surely be worth while to avoid this by spreading out the seed tubers thinly—preferably in single layers in some building having windows for the daily admission of light, and yet out of which frost can be kept.

The best plan of all is that of placing the tubers on end, with the eye end upwards, on shelves arranged in any convenient way; and though we have been asked how any farmer can be expected to have time or convenience for doing this, it is obvious that a man resolved to do his best is bound to adopt the best method of seed preparation. If in the autumn tillage of the land that portion of it intended for Potatoes was thrown into ridge and furrow, making the furrows the right distance apart for Potatoes, when planting time comes the work is done expeditiously and in the best way. There are the furrows ready to our hands; we have only to apply manure, place the seed in the furrows, level down the ridges, and the work is done. An excellent chemical manure for the purpose is made by mixing one part kainit, or half-part of muriate of potash, with three parts of superphosphate, adding one part nitrate of soda for poor land, and using from 4 to 5 cwt. per acre. This is sown broadcast over ridge and furrow at the time of planting.

### WORK ON THE HOME FARM.

Reports from districts situated widely apart tell of arrears of ploughing. This is a serious matter, especially on stiff land farms, for the soil has been so saturated by an exceptionally heavy rainfall in February that it can hardly be got into condition for sowing till late in the season. Every spring shows how invaluable autumn tillage is, yet the difficulties involved in ploughing arrears would seem to have no influence upon autumn work. Let spring corn show a full plant before sowing Clover or mixed seed among it, but lose no time in sowing the fodder crops as soon as the Barley or Oat plant is visible along the rows. Push on all sowing when the soil is dry enough for the work to be done expeditiously and well. Finish under-draining now on pasture, get the sods placed carefully on the soil in the drain trenches as soon as possible, pass a heavy roller over each line of sods to press them well into the soil while it is moist, and follow at once with chemical manures wherever they are to be used. Clear up all broken drain pipes and see that everything is neat and in perfect order before each portion or job of work is left. Pasture generally is very bare, no cattle can be out upon it for some time, and the beneficent effect of regular manure dressings will tell well now, as it is only by such sound practice that an early bite on pasture is possible. Where Rye is at all backward it should have an immediate dressing of nitrate of soda at the rate of a hundred-weight per acre, and it will then soon be ready for folding ewes and lambs upon. After the folding it may be left to grow again and be harvested for the seed and straw, or it may be ploughed at once for drilling Thousand-headed Kale.

Follow Swede folds closely with the ploughs, and sow either spring corn or fodder crops without delay. Do not forget how useful two or three successional sowings of Vetches are. Some land to be laid down to permanent pasture has been sown with Oats, which will be most useful next winter; the Grass and Clover seeds will also soon be sown, and we may expect enough herbage upon it next autumn after harvest to make it worth while passing the sheep over it, but they will be withdrawn by the end of September.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

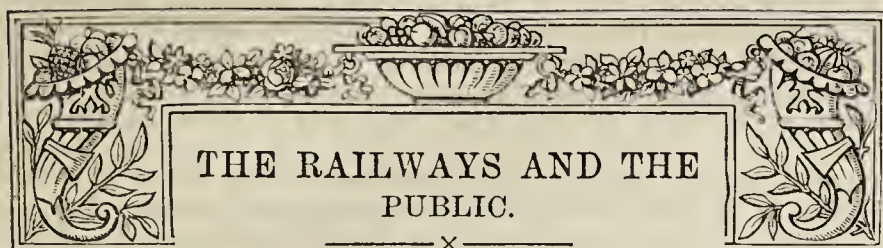
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1893. February.	Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. 19	29.871	48.4	47.3	S.E.	42.8	57.0	46.4	86.8	44.8	—
Monday .. 20	29.597	42.9	40.4	S.E.	42.6	48.2	39.2	58.2	33.4	0.177
Tuesday .. 21	28.761	46.9	46.7	S.	41.9	47.7	41.0	52.0	36.5	0.416
Wednesday 22	28.986	35.7	35.7	N.W.	41.9	37.3	35.3	41.8	35.1	0.153
Thursday.. 23	29.465	34.1	32.8	N.E.	40.1	35.8	32.2	42.8	31.8	—
Friday .. 24	29.356	33.2	32.3	E.	39.0	37.0	31.1	44.9	31.0	—
Saturday .. 25	29.248	32.0	30.8	N.	38.0	42.8	28.2	75.7	24.8	0.182
	29.326	39.0	38.0		40.9	43.7	36.2	57.5	33.9	0.928

### REMARKS.

- 19th. —Lightning soon after midnight and about 3 A.M.; rain till 3.30 A.M.; sunny and warm all day.  
 20th. —A little sun early; overcast, with occasional drizzle till mid-day; bright sunshine from 3 P.M.; cloudy evening and rain after 10.30 P.M.  
 21st. —Rain early and from 9.30 A.M. to 1.30 P.M.; fair afternoon, but rainy again in evening and night.  
 22nd. —Almost continuous rain or wet snow from 0 A.M. to 7.30 P.M. but very slight after 1 P.M.  
 23rd. —Enough snow to cover the ground about 4 A.M., nearly all melted by 9 A.M.; overcast throughout.  
 24th. —Overcast, with occasional small flakes or single crystals of snow falling in morning; gleams of sun after 3.30 P.M.  
 25th. —Bright sunshine almost throughout.  
 Temperature near the average, barometer much below it, in fact unusually low. Rainfall more than double the average.—G. J. SYMONS.





POWERFUL as is the great railway organisation, there is not wanting evidence that the British public is still more powerful. The proposed rates for merchandise as determined by the concerted action of the companies cannot be sustained, and there is a general tendency to return to the old scale, coupled with the repayment by the companies of what may be called the excess charges that have been enforced. If it had been possible for the higher rates to be maintained the effect would have been disastrous, and shareholders must have eventually suffered; but the great community of producers would have suffered the first and the most, while the prices of goods to consumers must have been materially enhanced. The ultimate effect of the new changes would have amounted to a tax on food, and as no Government is strong enough to impose any such tax, even if disposed, it was not to be expected that the public would allow any irade organisation, however powerful, to do so; and hence the whole country, so to say, rose in rebellion at what was felt to be an unbearable imposition.

The new rates would have had a ruinous effect on farmers, and especially on market gardeners, and the case made out by the recent deputation of the latter to the Board of Trade was unmistakable. The facts stated by Messrs. Berry, Poupert, Monro, and others were of the most crushing character, and such as no Government could ignore. When it is made clear that the difference between the old rates and the new for certain garden produce would amount to an increased rental of £5 an acre, the impossibility of the proposed charges is too obvious for argument, and a modification of recent rates becomes imperative.

The subsequent Parliamentary action, in which Sir A. Rollit and Sir James Whitehead figured prominently, and the result of their presentation of the case, leave no room for doubt that the new rates, broadly speaking, must go. It is due to Sir James Whitehead that his services be acknowledged. In and out of Parliament he has laboured incessantly in the public interest on the question of railway charges, and his undoubted ability and great tenacity have contributed largely to the results which have been so far achieved, but more remains to be done till the matter is placed on a perfectly satisfactory basis.

It is quite enough, in fact a great deal too much, that the preferential charges by which French and Dutch producers can place their goods in our markets at lower rates than Kentish and Essex growers are allowed; this, we say, is quite enough without further impositions being made that amount to a tax on home industries and the correlative crippling of trade. The railway companies have made a mistake. The practically formed syndicate is breaking up, shareholders will have to pay for the error in judgment in the form of reduced dividends, and the only hope for an increase of these rates is the expansion of trade, and clearly this cannot be developed by prohibitive rates for merchandise. As the riches of the railways have been mainly provided by the lowest scale of passenger fares, paid by the million of travellers, it may be hoped a reduction of terms for small consignments will be effected with the object of increasing the number of such consignments to the material advantage of producers and carriers. It is in that way prosperity lies, the opposite leading to stagnation and national discontent.

## LAND AND ESTATE DECADENCE.

## AN IMPEACHMENT.

I HAVE received the following letter from one of the best of British cultivators and estate managers. It is so trenchant and suggestive that the public who are interested in land cultivation ought to have the opportunity of reading it. The writer of the letter gives utterance to home truths in no hesitating manner, and as he is not a young enthusiast, but has had half a century's experience in land improvement, in which he has successfully shared, he is entitled to be listened to on that account.

He is earnest in the desire to see the gardeners of the future in the fullest degree competent, and several of his pupils worthily occupy responsible positions. He rebukes the frivolity of those heirs to estates who pay little or no attention to their improvement, but, on the contrary, impoverish them by indulging in the luxuries of life. He condemns the absurd practice of appointing agents who are necessarily ignorant on subjects which are the root and basis of successful management. He deplores the decadence of old families, and is deeply concerned that so many gardens are being ruined that dogs may be pampered and sport flourish. More in anger than in pity does he look facts in the face—facts, too, that he feels are of vital importance as affecting the best destinies of the nation. The letter was not written for publication. It is, perhaps, all the better on that account, and the great majority of the readers of the *Journal of Horticulture* will, I think, agree that it is worthy of a better fate than the waste paper basket; and at least they shall have a chance of judging. Here it is:—

"Your 'Primer' is bound to be useful to the million if they will read and digest. Would that young gardeners, as a class, would study the natural sciences that bear directly on horticulture. Both in agriculture and horticulture the state of matters in this respect, from the proprietor and his estate agent downward, is deplorable. I am certain if ten of our estate agents were asked what effect caustic lime has on land, the answer of nine would be a blank stare!

"In the first place, the heirs to estates are taught everything and anything but estate management, and in the majority of cases the management falls into the hands of a lawyer or half-pay captain. Is it any wonder the land interest is depressed? The marvel would be in these times if it were not. Fancy any of our large ship-building yards or any mercantile affair managed with as little knowledge scientifically of their business as agriculture is managed. What would be the result?

"The landowners are in many cases in difficulties. If they had made their land a study and lived reasonably they might have had splendid bank accounts, whereas they have not a peg to stand on. Gather up the rents, and go and squander them on all sorts of things but estate improvement! It takes £4,000,000 a year to keep up the hunting establishments of Britain, and what good does it do? The last thing to be reduced are the kennels and keepers, and useless horseflesh.

"I am grieved to see our fine old aristocratic gardens and estates in such a plight as they are in so many instances falling into. Want of order and high culture prevail where once the reverse ruled. Doubtless the masses are being reached by horticulture and its products as they never were before, and that is a blessing; but for what have we to thank the so-called managers of many estates?"

Though I know there are many gratifying exceptions to the conditions indicated in the above letter, the facts set forth cannot easily be refuted. There are prudent proprietors of estates who devote their attention to improvement, and there are competent and diligent managers, but all the same it is deplorable to note the spendthrifts in high places, who bring ruin to estates and misery to districts; and it is unfortunately true that persons are entrusted with the management of property whose training has been on wholly different lines, and whose tastes lean in the direction of sport rather than productiveness. Not a few of the most successful stewards and directors of estates were once gardeners—men of education, intelligence, business aptitude, and cultural skill. These men have been trained to habits of economy, and also to



regard expenditure as a profitable investment as far as circumstances permit. Against waste even in small things they resolutely set their faces, and their practical knowledge enables them to determine the cost and value of undertakings, and the return that should rightly accrue from expenditure. Half-pay captains and impecunious college chums cannot be compared with such men as wealth producers, for they know not the way; while the latitude given to many lawyers in the conduct of estates from a cultural and productive point of view is an anomaly.

I regret as much as my correspondent can do the decadence of estates and unproductive expenditure for personal gratification when matters of far greater importance are neglected. My friend is a Spartan in character, and as a stern utilitarian no doubt believes the old ways in working for profit are better than the new methods that have become established. I will ask him which he prefers of the following representative types:—

OLD.	NEW.
Man to the plough,	Man tally-ho,
Wife to the cow,	Miss piano,
Girl to the sow,	Wife silk and satin,
Boy to the mow,	Boy Greek and Latin,
And your rents will be netted.	And you'll be gazetted.

—J. W.

## FLOWERS AND PLANTS FOR AUTUMN.

MICHAELMAS Daisies are suitable for decorative purposes in the cut state. The species I grow most extensively is *Aster Amellus*, which is distinct and continues in flower until cut down by frost. *A. versicolor* is also valuable, and the two late flowering species *A. novæ-angliæ* and *A. novi-belgi* are particularly good. *Eryngium maritimum* is another useful plant for cut purposes, and the same may be said of *Helenium pumilum*. *Chrysocoma Lynosyris* is not so valuable as *Helenium pumilum*, but it is well worth growing, and so is *Rudbeckia Newmanni*. Some of the *Delphiniums* are very useful during the autumn, but whether they are in flower or not at this time depends greatly on the summer treatment. Either do not let the plants bloom in summer, or if they do this cut down the stalks immediately after flowering. *D. formosum* is perhaps the most useful of any. *Solidago canadensis* is serviceable, and so is *Chrysanthemum maximum*. The best *Chrysanthemums* we yet have are such as *Précocité* and the *Madame Desgranges* family. Of these a large number ought to be grown. I also like to have a few *Fancy Pansies* and *Tropæolums*, *T. canariense* being quite indispensable. Spotted *Mimulus* are also pretty and last well, and the value of *Roses* is well known.

Among the flowers cultivated under glass *Celosia pyramidalis* is of much value, and Ivy-leaved *Pelargoniums* are useful, *Souvenir de Chas. Turner*, *Galilée*, *Madame Thibaut*, *Le Printemps*, and *Madame Crousse* being especially good. Single yellow *Tuberous Begonias* will prove serviceable, and *Countess of Aberdeen Fuchsia* is an excellent variety when used in a cut state. *Liliums*, too, should be grown extensively, especially *Lilium speciosum* and *L. auratum*. *Allamanda Hendersoni*, *Eucharis amazonica*, and *Bougainvillea glabra* should likewise be grown for providing cut flowers.

Of foliage, the most suitable for decorating is *Maidenhair Fern*. If the plants have been kept in an airyinery throughout the summer the fronds will last in a good condition for a long period. *Asparagus tenuissimus* and *A. plumosus* are also valuable. *Smilax* is useful, and plants may be obtained from seed sown in spring and grown quickly. Like the *Asparagus* and *Fern*, this is of the very easiest culture. Coloured *Crotons* and *Dracænas* are both of great value. Commoner material will be found in the foliage of *Gladioli*, *German Irises*, *Solomon's Seal* (especially when the berries begin to colour), and *Thalictrum minus*. I also employ *Dahlia* shoots with buds, *Azara microphylla*, *Brambles*, *Sedges*, *Rushes*, *Reeds*, and *Bamboos*, and occasionally the foliage of *Pampas Grass*.

In cases where many plants are needed for apartments this is the time to commence getting together a sufficient stock. There are a few good flowering plants that are quite easy to grow, and which can be dispensed with if the ordeal of a week in a hot room proves too much for them. But, as a rule, by observing the adaptability of various plants one can save them for future use by changing at short intervals. In this way I make a practice of having a large number of *Zonal Pelargoniums* of purple or lilac shades, tinted rose being unsuitable. The best varieties I have

are *Brilliant*, *Freya*, *Chas. Mason*, *Rev. H. Harris*, reds; *Stella Massey*, like *Apple blossoms*; *Lily*, nearly a white; *Amy Amphet*, white; *Constance*, pink; *Helen Clarke*, and *Sissie*, salmon. A few good doubles are *M. Bruant*, *Meteor*, *L. Constable*, *Hermine*, *F. V. Raspail*, and *Gloire de France*. Double Ivy-leaved *Pelargoniums* are useful, the best for the purpose being *Madame Thibaut*, *Le Printemps*, *Alice Crousse*, *Madame Crousse*, and *Galilée*. Small plants of *Fuchsias* are also good, especially *Countess of Aberdeen*, which is an excellent decorative plant. I also like *Rose of Castille* for this purpose, and of doubles the very best I have tried is *Mrs. E. G. Hill*, the habit of this variety being perfect. *Begonias* are also serviceable for autumn, but though seedlings of the same year are, as a rule, too small, plants two years old are first-rate. These may be grown in a cold frame, and they make sturdy plants with little trouble. I also use a few of the double varieties, such as *Rosamonde*, *Fuljurant*, *Louis d'Or*, and others which are plentiful. *B. Weltoniensis* and *B. Carrieri* are both first-rate, and the ever-blooming and beautiful *B. Gloire de Sceaux* may be also used. *Celosias pyramidalis* and *plumosa* are quite indispensable. They are easy to cultivate, are of great beauty, and bear rough treatment almost with impunity. I grew several good strains last year, but I think of the whole none is so fine as the *Drumlanrig Yellow*, which is of a fine gold shade. A few well-grown plants of *Campanula pyramidalis*, more particularly the white-flowered form, do good service in early autumn. *Lilium auratum* and *Lilium speciosum* it is most necessary to have as pot plants. Good sized bulbs can be grown in 5 and in 6-inch pots, but when grown in such small pots they require to be well fed and generally well treated. *Carnations* are not so much appreciated in the autumn. I have had plants in pots at that season, and they were most serviceable. In March I intend to pot some layers for flowering in the forthcoming autumn. Good plants can be well grown in 6-inch pots, and for the very strongest 7-inch pots are large enough. I also like to have small plants of *Harrison's Musk*, *Campanula isophylla alba*, *Lobelia's Lady McDonald* and *Wave of Blue*.

Foliage plants include *Palms* and specimens from 4 to 6 feet in height, of the variegated and green *Ficus elastica*. *Pandanus Veitchi* is so serviceable that a large number of this is always worth trying to secure. *Dracænas indivisa*, *Veitchi*, *rubra*, *Lindeni*, *ferrea*, *Cooperi*, and *superba*; *Crotons interruptum*, *aureum*, *angustifolium*, *Johannis*, and *Countess* are perhaps the best of these plants. *Grevillea robusta* grown rapidly from seed sown in early spring or from cut-back specimens is a useful plant, and so is the green-leaved *Cyperus alternifolius*, which is most readily raised by means of seed. Seed of *C. distans* sown in spring produce good plants by the autumn. The *Aspidistras* ought to be divided in the spring and grown all the summer in a moist heat and shade. *Asparagus plumosus* is best raised from seed sown in spring, and old plants of *A. tenuissimus* trained to a single tall stake are very effective. They keep in good condition grown in 6-inch pots provided stimulants are given and no neglect in watering occurs. Plants of *Ficus repens* in small pots and with long drooping stems, along with a good supply of *Panicum variegatum*, and of *Smilax* grown from spring-sown seeds, are most useful. I always grow a number of *Caladiums* in small pots, and through the summer the plants do well in a cool house. It is astonishing how well the apparently delicate foliage keep when in rooms. A supply of *Coleuses* helps wonderfully, and the best variety for the purpose is *La Tête d'Or*. The habit of this is dwarf, leaf well developed, and the foliage is beautifully coloured. An abundance of *Maidenhair Ferns* is imperative, and they are easily grown. Along with the above *Isolepis gracilis* may be named as a very useful little plant. It can either be raised from seeds or by division of the plants in spring. In addition to those mentioned there are other valuable plants, but I think the foregoing will be found a good selection to get together to assist a gardener through the busy months of the autumn.—R. N.

## WELLINGTONIAS VERSUS AUSTRIAN PINES AS WIND TREES.

RECENTLY I noticed in the *Journal of Horticulture* (page 154) Mr. Molyneux drawing attention to the unsuitableness of *Wellingtonias* for exposed positions, or to form screens against high winds and gales, and I can quite bear out what he says. As at Swanmore, we too are subject at different seasons to heavy gales from the south-west, and in each instance where these trees are exposed to them they form a one-sided and unsightly appearance, while others planted about the same time but in more sheltered places grow freely and form handsome specimens. Mr. Molyneux has done well in warning intending planters against using *Wellingtonias* in such exposed positions; but I will go a little farther, and advise



all who are anxious to plant for protection to substitute for them a most valuable tree for the purpose—viz, the Austrian Pine.

Austrian Pines are great favourites here, and many thousands have been planted on the estate from time to time. Not only are they valuable to block unsightly objects and to form a break against high winds, but they are conspicuous in the landscape, and for this purpose few trees are their equal, especially during the winter, when they seem to give a tone of warmth to the whole surroundings, which deciduous trees can never give, let them be planted ever so thickly.

We have recently planted many more "Austrians." In one case 600 were used in one clump some two miles from, but still in view of the mansion, on a most exposed and elevated position. In spite of that, out of this number we only lost three—a convincing proof I think of their suitability for such a position, but we should not have succeeded so well had we not selected the right time to plant them. To have placed these in such an exposed place several months or weeks before growth had commenced would have been courting the death of many, and this I think is the great secret in establishing them—delay planting until growth has commenced. These under notice were not planted until the first week in May, a little too late perhaps, as the young growth, some 2 or 3 inches long, flagged, but after a good soaking, and the rain, which shortly followed, they commenced to grow, and have continued to make good progress.

Whether for shelter or landscape effect they should not be planted too thickly, neither should much underwood or deciduous trees be planted near them, as this would cause the lower branches to dwindle away, and the tree might soon become top-heavy, under which condition it could not be expected to withstand many severe gales. I have experienced this recently, where several trees in mixed plantations were blown over, while isolated specimens withstood the force with seeming impunity.

On the east and exposed side of a large orchard in this neighbourhood a double row of Austrian Pines are planted, and I have more than once proved the great protection they are to the fruit trees, not only while in bloom, but also when loaded with fruit. I do not suppose anyone would recommend the planting of the Austrian Pine with a view of timber for profit, but though it may fail in this respect, it more than compensates in being so valuable for the two purposes above mentioned.—RICHARD PARKER, *Impney*.



CYPRIPEDIUM CONCO-LAWRE.

AN award of merit was granted to Sir Trevor Lawrence, Bart., at the February meeting of the R.H.S. for the hybrid *Cypripedium* named above, and which fig. 41 represents. It is the result of a cross between *C. concolor* and *C. Lawrencianum*. The chief beauty of the flower, which is undeniably distinct and attractive, lies in the dorsal sepal, which is well rounded, and of a greyish white colour veined with rose. The engraving well represents this feature of the bloom. The petals and lip are similarly coloured. It is to be hoped that the name given was only a provisional one, for although to a certain extent expressive it is not euphonious.

DENDROBIUM FINDLEYANUM.

THIS is a very useful and effective decorative Orchid. Plants growing in 3-inch pots and having nine or ten knotted or nodated stems, about 1 foot high, covered with medium-sized flowers of

delicate and pleasing appearance, are very attractive. The petals and sepals are white, shaded with delicate mauve, the lip being cream and orange and slightly shaded with mauve at the edge. The plant is of erect habit of growth, and is deciduous.

DENDROBIUM FORMOSUM GIGANTEUM.

This charming *Dendrobium* is a native of Burma, and blooms at the points of the current year's growth, producing racemes of four or five large, pure white flowers, with the exception of the lip being blotched with bright yellow. The plant does best grown on a piece of board, being secured thereon with copper wire and tacks of the same material. Strips of cork should be placed between the



FIG. 41.—CYPRIPEDIUM CONCO-LAWRE.

roots and the wire to prevent the former being injured by contact with the latter.

For ordinary-sized imported plants I find a piece of board (oak or deal), about 5 inches long, 4 inches wide, and 1 inch thick, large enough. Of course large plants should be given proportionately larger rafts on which to grow. The plants should be suspended from the rafters near to the glass, and be given a high temperature with plenty of atmospheric moisture during the growing season, immersing the boards to which the plants are attached morning and afternoon in tepid water during hot weather, dipping them less frequently when dull.—H. W. W.

LYCASTE PLANA.

THIS *Lycaste* is one of the most ornamental members of the genus. It is a vigorous growing species, with large pseudo-bulbs, and long deep green leaves. The flowers are also large, often exceeding 4 inches in diameter. They are rather showy, the sepals, in good varieties, being of a fine claret colour tipped with green, against which the smaller white petals stand out in bold relief. The lip is white with numerous small rosy crimson spots, the petals have also a single crimson blotch on their tips. The species was introduced from Bolivia by Messrs. Loddiges about 1842. A rather highly coloured figure is given in the "Botanical Register" for 1843. A fine plant is now flowering at Kew.

The variety *Cumminsi* differs chiefly from the type in having the lip wholly rose coloured. In the variety *Measuresiana* the petals, as well as the lip, are thickly spotted with crimson.

CÆLOGYNE CONFERTA.

Like many others of the smaller *Cælogynes* this charming species appears to be a good deal overlooked in gardens. It is, however, really an attractive little plant, and is quite worthy of a



place in any collection. It is a very dwarf species, the pseudo-bulbs being little more than an inch in height. The leaves, which are produced in pairs, are short and leathery. The raceme springs from the base of the old pseudo-bulbs, and bears, as a rule, three flowers, each about  $1\frac{1}{2}$  inch across. The sepals and petals are pure white, but the lip has a yellow blotch in front, and the side lobes, which curve inwards, are beautifully pencilled with golden yellow.

Like *C. odoratissima*, which it much resembles in size and habit, this species requires an intermediate temperature. It may be grown on rafts, but succeeds better in small pans suspended from the roof. A compost of sphagnum and fibrous peat and a liberal supply of water at the roots are its principal requirements. A small plant is at present flowering in the cool Orchid house at Kew.—A. B.

## PACKING GARDEN PRODUCE.

(Concluded from page 170.)

IN packing vegetables, Turnips, Onions, Carrots, and Radishes are put together in one hamper; young Cabbages, Cauliflowers, and Lettuces in another, the latter being invariably uppermost, as they are easily damaged; Cauliflowers are packed between these and Cabbages. Peas, if plentiful, may be packed separately, or any space left is filled with Broad Beans. Generally Spinach is placed with Cucumbers, Vegetable Marrows, and Globe Artichokes, the latter being a vegetable which does not travel well unless carefully packed. Parsley, Mustard, Cress, Mint, and other herbs are put where space can be found for them. I endeavour to fill one hamper with flat bottomed, square punnets, in which there are Mushrooms, Tomatoes, and similar small things. A piece of paper is tied round and over each punnet. Small boxes, containing choice flowers, are packed with the punnets. It is not necessary to line all the hampers with paper, but a sheet ought to be placed on the top of the contents of each. It costs but little to do this, and the neatness secured is certainly worth the expense.

In general I think there is more care taken to ensure transmission of fruit so that it reaches its destination in good condition, than there is with either vegetables or flowers. For common fruits, such as Gooseberries and Currants, the punnets mentioned above are requisitioned. They are also employed for Melons. Each Melon is enveloped in packing material, and a punnet placed over each end; a string tied twice round keeps the punnets from moving. Grapes arrive in perfect condition, packed, as I shall describe, in a small hamper, which is first of all thickly lined with stout paper. The hamper is then placed in a sloping position, and the bunches put closely together until full. Cavities are filled with thin paper, and a few sheets of stout paper are placed on top next to the lid. At one time I used partitioned flat boxes for Peaches, but I find that open flat boxes do as well. It is not desirable to pack ripe Peaches without first swathing each in wadding. The lid of each box is tied down with string.

Regarding cut flowers, the chief points to observe are these: Select blooms which do not flag quickly or fall to pieces on the journey. Gather only those that are young, and fresh in the morning, and place the stems for two hours in clean water. There is quite a number of good flowers which cannot be depended upon to travel; some of these are Pelargoniums, Spiræas, and Mimulus. The blooms of double Ivy-leaved Pelargoniums, which are so pretty in vase decorations, even when gummed cannot be depended upon to hold together. It is, therefore, wise to reject all flowers about which there is any doubt whatever. Unfortunately, it does not always rest with the gardener to select, and occasionally special flowers are asked for, and these, no matter how unsuitable, must be sent. However, it is satisfactory that very many choice flowers are suitable, and these ought to be preferred. The propriety of choosing only young blooms is apparent when it is considered that they are superior to old ones; they arrive at their destination in better condition, and they last longer. The blooms of many plants are, indeed, better cut before they are fully developed, and all such ought to be chosen at the latter stage. A select list of such comprises Tulips, Narcissi, Irises, early Gladioli, Sweet Peas, Arums, Rhododendrons, Pæonies, Roses, Anemones, Eucharis, and Lilies; also some Orchids, as, for example, Dendrobiums. Orchid flowers ought to be cut when newly opened. During hot weather blooms apparently fresh fade quickly if left too long a time on the plant. Soaking the stems in water is beneficial from the fact that the cells are by this means charged with water, and the flowers consequently keep fresh much longer. Generally speaking, it is unadvisable to sprinkle water on flowers. If the atmosphere is dry and the weather hot, it is a better method to dip the boxes in water. Sometimes instead I place a layer of wet paper underneath, and then between it and the flowers one or more sheets of dry paper.

An essential part of good packing is to do it so that blooms are neither crushed nor bruised. The medium between too close and

over-loose packing is arrived at alone by practice; but whilst that is the case there are methods which obviate much of the evil effects of either. One of these consists in tying flowers in bunches. A few kinds are not amenable to bunching, but mostly all good flowers are. Short-stemmed blooms require only one tie, those with long stems two. All the flowers in each bunch must face one way. Three to six Arums make a bunch, six of Emperor Narcissus, and twelve blooms of the poeticus section. The foliage of some plants is best tied with the bloom; in this way Lily of the Valley, Tulips, and Roses are arranged. Previous to any flowers being placed in the box or hamper, the receptacle is lined with stout paper. There is no better available non-conducting material than paper, hence its value. Fine thin paper is employed to pack among choice flowers. Such a difficult flower as the Eucharis travels safely with nothing but this fine paper placed between and above the petals. Light boxes and hampers are tied in twos and in threes; but in no case is one parcel made too heavy or too bulky for rapid handling.

The plants invariably sent to "town" are foliage kinds only. When tall they have to be packed in a slanting position to enable them to pass under viaducts; large plants are always heavy, and the only means of sending these without receiving damage is to pack securely. Here, also, paper is solely used. If a Palm is sent a stout stick is first put in the pot, to the stick all the leaves are tied separately, and paper is then wound firmly round and tied on. Plants of *Ficus elastica* do not require the foliage tied; beginning at the base of the plant the leaves are pressed close to the stem, and are kept there by means of sheets of paper, which when put on are tied in a few places. *Aspidistras* and Maidenhair Ferns are examples of plants which as a rule are sent without being first tied up in paper. Strong crates are used for carrying purposes. The plants are first of all packed closely together and the pots protected by means of straw. Then the larger plants are tied together and the smaller ones in turn secured to these. Packed in this way they arrive at the end of the journey in perfect condition.—R. P. B.

## PROTECTING FRUIT BLOSSOMS.

THE casual observer cannot but have noticed that there is a great difference in the bearing of fruit trees. This may be due to various causes other than variety, as location and culture, for the blossoms of fruit trees vary in hardiness. Large flabby blossoms on young sappy wood are more liable to suffer from frost than sturdy flowers borne on well matured harder wood; in fact, adaptation of a variety to the environment depends greatly upon acclimatisation and cultivation. If an Apple tree is planted in rich, deep, damp ground on the flat, and another of the same variety is planted wholly above the surrounding level, there is a difference in the hardiness of the blossoms of the two trees. Those of the tree placed in the level ground are perhaps larger, thinner, and softer in texture, expand widely to receive and condense aqueous vapour into dew, which soon passes into hoar frost, and the consequence is they are easily crippled or destroyed. On the other hand, the blossoms of the tree on the mound are bold, sturdy, and leathery; not being succulent, the invisible moisture of the atmosphere is not condensed quickly by them, because they are comparatively warm and dry. The cold causes the nerve-like ducts of the cells in the petals to contract and fold over the organs of fructification, which encloses relatively warmer and drier air, so that less dew is deposited on the blossoms, and they longer and better resist frosts. In brief, cultivation has an important bearing on the hardiness or otherwise of fruit tree blossom. Varieties, however, vary in hardiness of blossom. Breda, Royal, and Blenheim Apricots are hardier as trees and in blossom than Moor Park and its varieties; whilst the Syrian variety, Kaisha, sets and brings more fruit to perfection in a given space than any other Apricot. There is no Cherry so hardy in blossom as Corone (Hertfordshire Black), and its petals hug the stamens and pistil on a cold frosty night.

The difference in the hardiness of the blossom of Pears is remarkable. Crawford, Lammas, Hesse, Beurré Capiaumont, Fertility, and Swan's Egg may be less gaudy than most varieties when in bloom, but they are generally loaded with fruit when Williams' Bon Chrétien and others have the merest sprinkling. Comte de Lamy produces sturdy blossoms at the points of the well-set growths, and it is not only the best flavoured of all Pears, but the most certain constant cropper. It is much the same with Plums, Rivers' Prolific defies the elements that causes Orleans to cast its frosted fruit in shoals; Victoria is burdened with fruit where Goliath and Prince of Wales collapse. In Apples there is no comparison of the tender blossomed with the hardy.

There are differences, therefore, in the hardiness of fruit tree blossoms; they may be slight, yet sufficient to account for failure



in some cases, and to point how success has been achieved in others. A tree that has to struggle with adverse climatic conditions, attended by hosts of insect and fungal enemies, cannot possibly succeed as well as another more befitting the position. Cultivators that note the natural fitness of things, Nature's selection, and, being guided by experience, proceed on like principles in their culture, cannot fail of a large measure of success. Those, however, that will cling to Nature's rejections, insist on attempting to cultivate varieties that experience has proved unfitted to open air culture, must be prepared to afford them protection against adverse climatic circumstances, either by growing them in forms available for it, or against walls or under glass.

Relative to the protection of fruit tree blossoms, it may be observed that none is altogether frost proof. The late Mr. J. R. Pearson held that dryness was the chief thing to aim at in protecting blossom from frost, and advocated open glass sheds as sufficient for those of the Apricot. Of such I have no experience. Perhaps the Messrs. Pearson will kindly say if the system is now practised and with what results. I have, however, found Apricot blossoms to endure frosts against cottage and farm house walls that were unprotected, and come out of the ordeal unscathed, whilst those on trees against a garden wall, and with a double thickness of herring netting over the trees, were blackened and the young fruit parboiled. This can only be accounted for by the projecting eaves and the greater warmth and dryness of the cottage and farm house walls preventing the deposition of dew, consequently the better resistance of the blossoms to frost. I have also observed that when a garden wall had a projecting temporary coping of wood or glass, and the netting was suspended from its outer edge, reaching to within 18 inches of the ground, that the blossoms were quite safe when those of trees similarly protected, but without the coping, were seriously damaged. This demonstrated the importance of dryness, and I found it applied to all fruit tree blossoms. Some gardeners do not believe in walls for Apricots and Peaches or Nectarines, alleging that Pears and choice Plums are more suitable for south walls; but Pear blossom appears so early in such positions, that, without protection, they are not more certain than Apricots, Peaches or Nectarines. I am not going to discuss the question of aspects, but it is as well to know that a Jargonelle Pear tree on the south side of a wall may be fruitless, whilst another on the north side is loaded with fruit the same season. Much depends on seasons and circumstances, though one thing is certain, that expanded blossoms must have protection from frost if fruit is to be had with certainty. There is no question as to the value of something projecting at the top of the wall at blossoming time. It may be only that of a few inches of slates or tiles with guttering to carry off the roof water of a building, and thus it will keep the wall dry a considerable way down. I mention this because it is worth knowing, that the ends and sides of houses and other buildings are better adapted for choice fruit culture than garden walls in many localities. Such Pears as Jargonelle, Triomphe de Vienne, Louise Bonne of Jersey, Durondeau, Marie Louise, Emile d'Heyst, Pit-maston Duchess, Beurré Baltet Père, Doyenné du Comice, Glou Morceau, Beurré d'Anjou, Joséphine de Malines, Nouvelle Fulvie, and Bergamotte Esperen are reliable sorts to afford a succession of fruit from August to May. Magnate and Beurré Diel produce enormously large and good fruit.

Apricot blossoms are the first to require attention. It is wonderful what may be effected by a little trouble and expense. Some dry straw threaded through the branches and amongst the spurs, so as to form meshes about half the size of those of a sheep net, and with the ends of the straws projecting a little beyond the spurs and inclining downward, forms a good protection. Effected in a neat matter when the blossoms show colour, and left until the trees have produced enough leaves to protect the fruit, there is generally a crop of Apricots. This simple plan answers for all kinds of fruit blossoms, the straw being excellent for placing over the roots as a mulch when removed from the trees. Another excellent method is to procure small twiggy branches of Hazel, Hornbeam, or Birch, and place them in behind the main branches of wall trees so as to hang over the blossoms, but not to unduly rest upon them, and only sufficiently thick to form a net-like covering. These are better than Spruce and other evergreen branches, though the latter are good when they do not exclude too much light. A third method is to procure some stout poles, long enough to reach the top of the wall beneath the eaves or coping when set a few inches in the ground 18 inches from the foot of the wall to keep them steady. Then make some soft straw or coarse haybands, with plenty of ends sticking out, and place them across the poles (fixed about 6 feet apart) longitudinally, the first just clear of the eaves or wall coping, the next 6 inches lower, the third 9 inches from the second, the fourth 1 foot from the third, and so on to 18 inches from the ground. The bands should be drawn

tight, secured to the poles, and made fast at the ends. The object is to keep the hoarfrost on the bands, where it may be thawed in the morning by the sun instead of on the blossoms.

Espalier trees may have Scarlet Runner stakes thrust into the ground on both sides, crossed and tied about 1 foot above the trees, a stout feathery straw band run along the forks directly over the espalier, and then similar bands at the sides, as described for wall trees. Pyramids and bushes can have poles or stakes thrust or fixed in the ground around them, so that when their upper ends are brought together and tied they will be clear of the trees. If the trees are in lines, the stakes or poles should be set parallel with the rows and meet over the centre, placing a rod lengthwise and resting in the fork so as to form a ridge piece. Straw bands may then be wound round the stakes, and at the distances named for those against walls. Trees in continuous lines should have a stout straw band fixed along the ridge, and the bands at the sides disposed as advised for placing across the poles in front of wall trees. Another plan of protecting bushes, pyramids, and espaliers is to place untrimmed Pea sticks around or along both sides, and arched over the trees, meeting or overlapping; and this simple method surpasses opaque material kept constantly over the trees. If the Pea sticks are twiggy, as Hazel and Hornbeam are, no further protection is needed unless the weather is exceptionally severe.

Straw mats secured to a light wood frame and that to poles, as advised for straw bands, are excellent for low walls or espaliers, using them only at night or during the prevalence of frost in the daytime. Close protective material must not reach entirely to the ground, but be kept fully 1 foot from it. Light awnings of tiffany, brown hessian, or scrim canvas, kept clear of the blossoms by stakes at the sides or around bush, pyramid, or espalier trees, with laths at the top to form the roof, afford needful protection. The sides may remain covered until it is necessary to remove the material altogether, but the top part must be withdrawn on fine days and when the weather is mild, an opening at the top and bottom being necessary to admit air.

Gooseberry and Currant bushes may be covered with tiffany or scrim canvas, but not reaching to the ground, and the material is easily kept in position with string secured to pegs driven into the ground. A little dry straw spread over the bushes when severe frost prevails, will afford the needful shelter and prevent the injurious effects of sudden thawing.

I will now return to wall trees. Copings have been alluded to, but I may reiterate for elucidation. A  $\frac{3}{4}$  inch board, 11 inches wide, fixed immediately under the wall coping to iron brackets slightly inclining outwards, answers for a wall of 10 feet high or less, one 14 inches wide is better for a wall 12 feet or more in height, and with a single thickness of pilchard or double herring netting in front of the trees, kept at a safe distance by poles, afford the needful protection to all but the tenderest blossoms. The netting and the coping boards should be removed when danger from frost is past. Glass coping projecting 2 feet for a 10-foot wall, and 2 feet 6 inches for a 12-foot wall, afford valuable shelter to blossoms and improve the fruit in cold districts. There are various forms; some are fixed to the wall, and the glass is easily taken out, others are "reversible," so that they can be withdrawn by day or when rain falls to wash the trees and moisten the border. As a rule it should be removed in the autumn and replaced when the blossoms need protection. Netting should be suspended from the front, and be kept clear of the trees.

For the protection of choice wall fruit tree blossom woollen materials, as worsted netting or frigi domo, are slower cold-conducting mediums than scrim canvas or brown hessian. Although I have used all these and many other substances, and prefer quarter-inch mesh wool netting, there is no objection to ordinary canvas or other material that may be sewn together and so made available. All points, however, considered, and material having to be purchased, scrim canvas No. 3 is the most serviceable for Apricots, Peaches, and Nectarines, No. 2 for other trees on south walls, and No. 1 for those on east or west walls. It must be kept from the blossoms. I use sawn larch poles 2 inches square (other kinds will do as well, only larch are the most durable), and place them 6 feet apart, the top resting under the coping, and the bottom let into the ground sufficiently to prevent displacement, 18 inches for a 10 feet, and 2 feet for a 12 feet, from the wall. At 2 feet from the ground a hole is bored with a half-inch auger in the outer face of each pole, driving in a hardwood peg projecting 9 inches forward. These support the canvas when lowered. A line of sash-cord is attached to one edge of the canvas opposite each pole, which has a stout ring with a staple near the top, so as to let the ring hang loose. Through this ring the line is passed from the under side for pulling up or letting down the canvas. Pulleys are better than rings, but cost more, yet it is saved



ultimately by the cords lasting longer. The necessary width of canvas must be sewn together, and a binding of small cord at both edges adds to its strength and durability.

Protection must commence with the appearance of the blossoms. The canvas should be drawn over the trees in the evening before the moisture descends, and it should remain in the morning until the frost has departed, then be let down to rest on the pins. Thus it is kept dry instead of lying on the ground. The protection should not remain over the trees by day unless the weather is frosty and the sun obscured. When the weather is mild it should remain down, for needless protection makes the blossoms, young fruit, and foliage tender. But the sheltering material should be retained for use when needed until the season is advanced, the weather genial, and the leafage of the trees abundant, as the young fruits are liable to injury, and crops of Apricots, Peaches, and Nectarines have been ruined even after the blossoms have been preserved, sometimes in late May. With due care the canvas will serve many years.—G. ABBEY.

## A PROFITABLE INDUSTRY.

### CRYSTALLISING FRUITS.

OF the many methods of preserving certain fruits for sale, none can possibly be so profitable as that of icing Apricots, Green Gages, Cherries, small Pears, and Angelica. At present the French seem to enjoy a monopoly of this industry, though it is to be hoped such will not be the case much longer. It may be urged that in France there are fewer bad fruit years than in England, but there is, as I shall prove, little or no force in this objection. In the first place it is doubtful if a complete failure will ever again be experienced in this country. Of late years such enormous numbers of fruit trees and bushes have been planted in well selected varieties that a bad failure seems almost out of the question. Partial failures there may be, but with so many sites chosen a general failure is not likely to occur. Lord Sudeley, for instance, did not mass all his trees and bushes at Toddington, but rightly decided to distribute the orchards over valleys and hills. Some seasons favour the trees in one locality only, and some, it may be, in all three; but enormous as may be the produce obtained from these orchards in years of plenty, there is no waste. Last season very few of us were prepared to learn that Plums were very abundant in Gloucestershire, Worcestershire, and elsewhere, while Cherries, by all accounts, were never more plentiful in Kent.

These facts are "ancient history" to many of my readers, but I have enlarged on them in order to dispose of a suppositious objection to my plea for an intelligent start being made towards establishing the most profitable industry connected with fruit culture. Even supposing our climate cannot always be relied upon to produce the requisite supplies of fruit for crystallising, what is to prevent the importation of Apricots and Green Gages, more especially on a large scale, whenever failures occur in this country? They may not equal home produce in quality, but they are the same as are imported already encased in sugar, and they are always far too cheap to please home growers of the same class of fruits.

A 1 lb. box of crystallised fruits assorted or in separate kinds cannot be bought for less than 1s. 6d., this being the store price for medium quality only. The better brands, as sold by the leading Italian warehousemen, are considerably dearer, partly owing, doubtless, to the greater profits obtained by the retailers. Even supposing the manufacturer, if I may so term him, does not get more than 1s., or, more likely, 1s. 2d. per lb., this must be a very good return. Remember the weight is largely made up of sugar, and the best loaf sugar can be bought in large quantities for less than 2d. per lb. Imported Green Gages can be bought retail at 6d., and very much less wholesale per lb.; Apricots realise rather more, but then they are also sold again at dearer rates after they have been iced. If the start was made other than in Kent, the best county for Cherries, the greatest difficulty would be experienced in procuring the requisite supplies of these, as only perfectly sound fruit is fit for the purpose.

Angelica will grow anywhere, no great cultural skill being required in raising a large number of plants from seed and growing these to a size large enough to provide stems or hollow stalks for cutting up into lengths for candying. The price obtained for this when properly prepared falls only a little short of that given for the fruits named, and it must be a profitable item. There is, then, nothing to deter anyone from starting this very remunerative industry, though it ought really to be established in connection with a fruit-preserving and bottling factory. I fail to see that any

great amount of skill is required in crystallising fruits, any ordinary cookery book giving trustworthy recipes. In some they may be found under the heading of Green Gage Glacés, Crystallised Apricots, Iced Cherries as the case may be, all, if I am not greatly mistaken, being much the same thing. The processes in the case of Green Gages consists of pricking each particularly ripe Plum with its stalks intact all over with pins. They are then put in copper preserving pans, containing clarified boiling syrup, and kept just off the fire, in which position they are left till next day, when the syrup is drained off, boiled, and returned on to the Plums again, and covered with Vine leaves. This is repeated three successive days, after which the fruit should be drained free of the syrup, placing them on wire drainers for the purpose, and put in a screen to dry. After this they ought to be dipped in some prepared sugar, which has been boiled to the "third degree," whatever that may mean (and which must be worked slightly with a spoon to dull it) and placed upon a wire fruit drawer resting on a baking sheet. At the end of about ten minutes, if the sugar has been properly boiled, the fruit may be detached without breaking the sugar by pressing with the fingers from underneath. Apricots are usually split and peeled, and not pricked. In all other respects they require the same treatment as that recommended for Green Gages. Small Pears only are candied, these being smoothly peeled but not cut or pricked, and otherwise treated similarly to Green Gages. Sound ripe Cherries should be selected and the stones picked out with a pointed stick without bruising the fruit. In other respects treat similarly to the other fruits, only the Cherries ought to be turned occasionally while being dried in the screen.

Preserving Angelica green would appear to be almost a lost art in this country, though a revival is taking place in two instances that have come under my notice. I can only find one good recipe, and that is by Francatelli, and which, perhaps, I shall be allowed to reproduce in full as follows:—"Cut the tubes or stalks of Angelica into 6-inch lengths, wash them, and put them into a copper preserving pan with hot syrup; cover the surface with Vine leaves, and set the whole to stand in the larder till the next day. The Angelica must then be drained on a sieve, the Vine leaves thrown away, half a pint of water added to the syrup, in which, after it has been boiled, skimmed, and strained into another pan, and the copper pan has been scoured clean, both the Angelica and the boiling syrup are to be replaced and the surface covered with fresh Vine leaves, and again left to stand in this state until next day. This process must be repeated three or four days running, at the end of which time the Angelica will be sufficiently green and done through, and should then be dried and otherwise treated as advised in the case of the fruits already alluded to. Or if preferred the Angelica tubes may be put into jars without breaking them. After the syrup has been boiled and skimmed fill up the jars, and when they are become cold cover them over with bladder and paper, and store in a very cool temperature."

I ought, perhaps, to add that the proper way to prepare the syrup several times mentioned is as follows:—"To 3 lbs. of loaf sugar add 1 quart of water and half a white of egg; whisk all together in a stew pan or sugar boiler, and set it to boil gently for five minutes, adding occasionally a little cold water, and then strain it through a napkin into a basin.

To the male mind the foregoing brief outline of the process adopted in crystallising fruits may appear somewhat formidable, but this is an industry that females are best adapted to, and a fairly large undertaking should find employment for a considerable number of respectable women.

What greatly adds to the appearance and consequently the market value of these fruits are the very showy boxes in which they are neatly packed. At Christmas time these boxes of French fruit are very freely distributed in the form of presents by leading grocers and Italian warehousemen—they would almost appear to have been invented for that very purpose. Now, if there was a demand for this class of box there would be plenty forthcoming, made in this country too. It would really be a relief to very many English people to see more of our products in the markets, "Made in Germany" being repeated far too often to be pleasant reading. I happen to know that very cheap flat or circular paper boxes with showy pictures on the exterior and equally ornamental accessories for the interior could be had from Bristol, and doubtless from various other large towns. Filling the boxes again would be best done by females. It may be asked how the fruit is to be sold to best advantage after it is ready for the markets? The same large wholesale firms who take much of the jam that is made would be equally ready to pay a fair price for good English crystallised fruits, and that would most probably be the best method of distribution open—at any rate for some time to come.—W. IGGULDEN.





## ROSE SHOW FIXTURES IN 1893.

- June 20th (Tuesday).—Westminster (N.R.S).  
 „ 28th (Wednesday).—Clifton,\* Richmond (Surrey), and Windsor.  
 „ 29th (Thursday).—Eltham.  
 July 1st (Saturday).—Crystal Palace (N.R.S.).  
 „ 4th (Tuesday).—Canterbury and Gloucester.  
 „ 5th (Wednesday).—Croydon, Ealing, and Lee.\*  
 „ 6th (Thursday).—Bath, Norwich, and Sutton.  
 „ 11th (Tuesday).—Wolverhampton.†  
 „ 13th (Thursday).—Worksop (N.R.S.), Harleston, and Wood-bridge.  
 „ 14th (Friday).—Helensburgh.  
 „ 15th (Saturday).—New Brighton.  
 „ 27th (Thursday).—Southwell.

\* Shows lasting two days.

† Shows lasting three days.

I shall be glad to receive the dates of any Rose Shows not mentioned above for publication in my next list of fixtures, which will be issued early in April.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

## NATIONAL ROSE SOCIETY.

I HOPE that I may be excused for interfering in the little tournament now going on in the pages of the *Journal of Horticulture* between Mr. Pemberton and Mr. Grahame, of which I think we may now say to both combatants, Hold, enough. Of course, I think it was a pity that the main question should have been shunted off the line and the issue joined on a side matter which had, as I believe most rosarians think, nothing to do with it. I am sorry that Mr. Pemberton took the line he did in his attack on Mr. Grahame, but I do think we may ask that you would kindly interpose your editorial fiat and say the “incident is finished,” as the diplomatic phrase runs. Both are well accounted of in the Rose world—one as one of our most successful exhibitors, the other as one who has done good yeoman service for the N.R.S., has procured a large number of members, and has induced the Society to introduce the new system of exhibiting according to amount of Roses grown; therefore I say to both, Bury the hatchet, and if they are still thirsting to scalp each other I hope you will promptly take it from them and bury it yourself.—D., *Deal.*

## NATIONAL ROSE SOCIETY—THE ROSE CONTROVERSY.

WHAT was my horror on opening the *Journal* this week to find that the apparition I thought laid, had again arisen to haunt me from the dank Essex marshes! It has struck me that the following short and hitherto unpublished extract from the drama, entitled “The War in the Rose World,” best explains how the “Veracity” case stands.

## DRAMATIS PERSONÆ.

The Very Rev. P. (*Bishop of Havering*), a proud rosarian of ancient fame, and a leader of men on clay.

Sir C. J. G. (*of Coombe*), a Surrey knight of some slight renown.  
 And OTHERS.

## ACT. V.—SCENE 4.

Scene—*Somewhere near London.*

(*A battle is raging in the distance, and from out the mêlée two knights are seen to separate themselves and approach.*)

Very Rev. P.—Hold and stand fast, impostor! Thou sorry knight and ignorant novice of '89. What canst thou know of Roses? Defend thyself!

Sir C. J. G.—Softly, good sir, softly; although, mayhap, not quite so old a hand or doughty champion as thou art, yet perchance I may be granted an earlier year of birth—even say that of '73.

Very Rev. P. (*in a musing*).—Ah! “IF” this were true, then it were possible I might apologise.

Sir C. J. G.—Most reverend sir, even with your reserved “IF,” I would accept your withdrawal, and without reservation.

Very Rev. P. (*suddenly becoming enraged*).—No, false knight! Thou daredst to doubt my veracity, so here's at thee! (*Deals Sir G. a foul blow, who at once collapses, and is carried off the ground.*)

[Band plays “The Bogey Man.”]

## TABLEAU.

N.B.—The influenza and the effect on many of a severe Lenten diet at the moment accounts for many hallucinations.—CHARLES J. GRAHAME, *Croydon.*

[We think, as “D., *Deal*,” suggests in his letter, that the time has arrived for dropping the curtain.]

## THE WINTER AND TEA PROTECTION.

WE may now hope to have seen the last for this winter of really severe frost sufficient to be fatal to Tea Roses, and in the eastern counties we have certainly been more leniently treated than in the two previous seasons. I am becoming more than ever convinced that elevation—a high position—is the most desirable precaution for avoiding injury

to Tea Roses from frost. I have now some Tea standards on the very highest point in my grounds, and though only protected by a little Fir branch or two, even the protruding tips are unhurt.

With my Tea standards on the lower ground, where they have suffered so severely in past winters, I took severe measures, determined they should not be killed if they could be kept alive. So I dug under one side of each row, and bent and pegged the plants down on the other side flat on the ground, and covered them, first lightly with straw and then with 6 inches or so of mould, they were thus clamped like Beet or Mangold. My *Maréchal Niel*, the few I have left, were treated in the same way, but, of course, I do not know yet how the poor things like it.

For my Tea buds—standard stocks budded last summer with Teas—I found what I believe will prove to be a capital protection in the straw cases used by wine merchants for covering the bottles they send out. The budded laterals must of course be cut rather short, but you may leave a wild bud or two beyond the “work” and yet have room to slip these useful nightcaps over their heads far enough to prevent their being blown off. It is desirable to see that the top string of each one is as tight as possible, and then this covering seems to have the following advantages: It requires next to no preparation, is on and off and on again in a moment, and makes no litter; acting as a thatch it keeps the bud dry as well as warm; and, lastly, I have no doubt they can be procured in quantity very cheaply at hotels and clubs, if something be offered for the collection beforehand.

## RETARDING TEAS.

I wonder those exhibitors who complain about their Teas being all over by the time of the principal shows do not try some methods of keeping them back. The north side of a wall will not do, for Teas do not like shade, and too late pruning will not do either, or the plants will have spent too much of their strength. Years ago, when I lived in a higher situation and grew Teas better than I do now, I used to retard mine by the simple process of mulching heavily. Mulching is commonly used in the autumn to keep plant roots warm, but it should not be forgotten that a blanket will keep ice cold as effectually as it will keep a man warm. My mulching, not less than 3 or 4 inches, of long wet manure was put on in late winter when the soil was thoroughly chilled, and kept on till the last, and I believe it was successful, but the plants being more backward did not, of course, look so strong as others in May, and one is apt to be dissatisfied at that time. Still, there was no Tea Rose show in those days, and then as now, the man who had good store of first bloom Teas well into July had a great pull over his rivals. If anyone feels inclined to try it, I should recommend the experiment being tried with a few at first.

## THE GRECIAN PRUNING SAW.

I have been surprised that I could not get any of the ironmongers in the large town near which I live to understand what I meant by a pruning draw-saw of the form known as “Grecian.” It is a very simple saw, yet always seems to me the best and handiest instrument for cutting through large roots in the ground without moving the soil. I have got one again at last from a large firm of seedsmen, and to-day, being too cold for any other job connected with Roses, I sallied forth to my old trade round the hedges of collecting standard Briars. The saw was new and sharp (it is apt to get soon blunted in sawing through the soil), and it was astonishing what quick work it made of getting strong stocks out of cramped positions in thick hedges without injuring the roots. With a little single-hand stock axe for removing the earth, a large strong pair of pruning scissors for branches and small roots, and the Grecian saw, I had twenty-nine good Briars in a little over two hours, and felt I had earned my dinner. Root-pruning of fruit trees is not often required on my soil, but I should think this would be the best instrument to use in such cases, though of course the cut part should be afterwards pared with a sharp knife.—W. R. RAILLEM.

## DISCUSSION ON PEACHES.

## PEACH CULTURE INDOORS AND OUT.

WHERE ripe Peaches are wanted at midsummer the forcing should have commenced in January, and in such cases the opera or must proceed cautiously. Do not maintain too high a temperature to begin with; 45° at night with a rise of 5° by day should be the maximum until the buds begin to open, when a higher temperature will be necessary. The borders must receive a thorough soaking of tepid water so that they will require no more while the fertilising is going on, as the fruit will set better in a dry atmosphere than in a humid one. Air should be given on all favourable occasions, and the available surfaces damped only on the mornings of fine days until the fruit is set. In forcing Peaches thus early I find a camel's-hair brush the best fertilising agency; the flowers should be gone over daily with it at about noon, or as soon as the pollen is dry. It is rather tedious work, but it pays for doing; on fine dry days the pollen can be dislodged by giving the tree a sharp rap with the hand. When the fruit is set the forcing can be hurried on for a time provided the weather is favourable, but the trees have yet a critical period of stoning to pass through, and here again caution must be our guide. Let the temperature be steady; 60° at night with a rise of 10° by day. Previous to this the fruits should have been thinned to the number that is required to be left on to ripen. Keep the roots well supplied with water, also use the syringe frequently on the trees until the fruits begin to ripen, when it must be reduced until after the fruit is gathered.

It has been said, and there is much truth in the assertion, that good



Peaches can be grown without the aid of glass houses; but this remark only applies to places where the soil and situation are favourable to the growths of the trees. In some localities it is impossible to grow Peaches out of doors; therefore, it is absolutely necessary that in such places they should have the protection of a glass house. One of the best examples of outdoor Peach culture I have seen is at Cardiff Castle, and there, with a combination of cultural skill and a good situation, the trees produce some splendid fruit; there also is some of the finest specimen trees indoors that I have ever seen. Trees that are growing too strong or rooting deeply into bad soil would be better lifted and have their roots placed nearer the surface in a good compost. The work could be done any time between now and the third week in March, as Peach trees will respond to late planting better than any other fruit trees.—R. MORSE.

#### PEACHES AT THE BRIARS, REIGATE.

EXCEEDINGLY interesting to all concerned in Peach culture is the house at this place which is devoted to these fruits and Nectarines. It is a span, fairly high, well ventilated, and standing, as everything about the place is, on the top of a sharp slope to the east. The remarkable thing about the trees is the enormous development of stem. The trees were planted about fifteen years ago. On one side there is a very fine Rivers' Early York Peach that has close to the ground a massive stem fully 3 feet in circumference, and from it breaks out three large branches from 6 inches to 8 inches through. The entire tree covers an area 24 feet by 12 feet, is trained on a trellis 3 feet from the glass, and carries enormous crops. All the other trained trees have relatively the same huge stems and robust growth. They comprise Princess of Wales and Noblesse Peaches, Lord Napier and Humboldt Nectarines.

Mr. Bailey remarks that heavy cropping is absolutely needful to keep the trees somewhat in check. The borders are about 4 feet in width, but it is evident the roots have gone away into the natural soil, which is a very good dark loam on stone brash, with a chalk strata below. In the centre of the house are several very fine, but still clump-headed, standards having most massive stems. These are about 12 feet in height, and comprise Stanwick Elruge and Lord Napier Nectarines, and Early York and Princess of Wales Peaches. There is at one end on the side border standing a huge standard of Early York in a large pot, the roots of which have gone through into the border.

Altogether it is a very remarkable Peach house, and when in fruit must present a beautiful sight. The borders are now mulched with manure, a combination from the stable, cowshed, and pig-stye, well mixed and prepared. This gives some food for surface roots, and emits a little welcome ammonia.—A. D.

#### ALEXANDER AND WATERLOO PEACHES—BUDS DROPPING.

I DO not know what may be the experience of other gardeners this season with the culture of Alexander Peach, but once again has it been my misfortune to see all the best and most promising buds drop just at the time when one naturally expects them to expand into bloom. The only flower buds which have not dropped were the terminal and spur buds, of which there is a good set. I enclose samples for your inspection. Knowing from practical experience the fault of this Peach to cast its buds, I was tempted when again taking charge of these gardens last October to replace Alexander by a tree of Waterloo, but deferred doing so for the sake of one more experiment.

Gardeners assign various causes which help towards the dropping of Peach buds, but in my case none of the usual alleged faults will apply. The wood was perfectly matured and broke regularly into growth, water had been early applied in sufficient quantity to the borders, no insecticide was used, as the trees were perfectly clean and healthy, yet the buds dropped except those mentioned. This in my opinion shows that there is some constitutional weakness in the Alexander Peach, either from over-propagation or from climatic causes, as it is a well known fact that buds drop less from this American variety later on than they do in early houses. In the same border and house, which is an early one, trees of Noblesse and Lord Palmerston Peaches, with Lord Napier Nectarine, have not cast a bud, but have an abundance of fruit set and swelling.

I have come to the conclusion after careful experiment and observation during several years, that this variety requires different treatment to other Peaches. Instead of disbudding the growth it should be allowed to extend and be pinched so as to form spurs; I fully believe that therein lies the secret of success with this Peach in this country. The buds do not drop from spurs and terminal growth, but appear in clusters, and with careful fertilisation every one of such buds expands and sets its fruits. I intend to try Alexander as a cordon and hope in due course to be able to report progress.

I have grown Waterloo as well as Alexander, and after trial think the former is a far better Peach for early work than is the latter. Waterloo is of a better constitution and does not drop its buds like Alexander. The fruit, moreover, is larger, of a better colour, and quite as early. I cannot understand why Waterloo is not more grown than it is in early houses in preference to Alexander, as Peaches which ripen good fruit a month earlier than other varieties are certainly valuable, and it is of no use depending upon Alexander until its culture is thoroughly mastered when we have at hand so excellent a Peach as is Waterloo for early work. Those who have the opportunity should plant the two varieties, and they will not be long in giving the most room to Waterloo.—JOHN CHINNERY, *Downton Castle Gardens*.

[The three flowers on the terminal immediately below the central growth bud have set perfectly, as have the two on the small spur. We shall be glad to hear what other growers of the Alexander and Waterloo Peach have to say about them.]



EVENTS OF THE WEEK.—The ensuing week will be rather a busy one in horticultural circles. On Monday evening, March 13th, the annual meeting of the United Horticultural Benefit and Provident Society will take place at the Caledonian Hotel, Strand. The Committees of the Royal Horticultural Society meet on the following day March 14th, at the Drill Hall, and Professor G. Henslow will give a lecture at the afternoon meeting. The Committee of the National Rose Society and the Horticultural Club also meet on the same day at the Hotel Windsor. The first spring Show of the Manchester Royal Botanical Society will be held at Manchester on Tuesday next. The customary auction sales will take place, including the second portion of the Fernside collection of Orchids, which will be sold on the 11th by Messrs. Protheroe & Morris at their rooms.

— THE WEATHER IN LONDON.—Bright spring-like weather is rapidly bringing forward the fruit blossoms in the south, and already numerous trees and shrubs are showing signs of bursting into leaf. Sunday, Monday, and Tuesday were fine and mild, and at the time of going to press there are indications of similar weather continuing.

— THE WEATHER IN THE NORTH.—Since the opening days of March, on which much snow and sleet fell, there has been an improvement in the weather. Occasional showers day and night have occurred. Sunday was a fine day throughout, Monday also fair but colder, and this morning (Tuesday) promises well though somewhat dull. Crocuses have pushed rapidly into bloom.—B. D., *S. Perthshire*.

— ROYAL HORTICULTURAL SOCIETY.—The Society will hold its next display of fruits, flowers, and vegetables in the Drill Hall, Westminster, on Tuesday, March 14th. At 3 P.M. the Rev. Prof. Henslow will lecture on "Some Effects of Growing Plants under Glass of Various Colours," which ought to prove interesting to gardeners. All persons whether Fellows of the Society or not, may exhibit at the Society's meetings.

— UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual meeting of this Society will take place on Monday evening, March 13th, at the Caledonian Hotel, Strand. The chair will be taken at eight o'clock by Geo. J. Ingram, Esq.

— ELECTRO-HORTICULTURE.—This was the title of a paper read by Mr. G. E. Bonney before the members of the National Amateur Gardeners' Association at the Memorial Hall, Farringdon Street, E.C., on Tuesday evening last. Mr. T. W. Sanders presided, and there was a large attendance. Mr. Bonney dealt with his subject in an able manner, and detailed methods by which electricity could be brought to bear upon plant culture, remarking that in some instances beneficial results might accrue from its use.

— GARDENING AT THE GORDON BOYS' HOME.—Lieutenant-Colonel J. B. Walker, Commandant of the Gordon Boys' Home, says material for the sixty-two boy amateur gardeners of the institution will be thankfully received. Their plots of ground have been dug, manured, and prepared, but plants to stock them are sadly wanting, and it is suggested that roots of herbaceous and perennial hardy plants, such as are thrown away every year by hundreds in large gardens, might instead be packed in hampers and forwarded to Woking Station.

— WE have to acknowledge the receipt of the Rev. D. R. Williamson's "POEMS OF NATURE AND LIFE," from the press of Messrs. Blackwood & Sons. This small volume is a model of tastefulness, both in binding and typography, as becomes a work emanating from so distinguished a firm. The author seems to possess a keen sense of the beautiful in music and in scenery, and to have been a busy bee in the garden of the English poets, his sweets having everywhere a familiar and eclectic flavour. We cannot instance his poems to flowers, to wit, the Snowdrop and the Primrose, as being among his happiest efforts, though here as elsewhere his muse moves melliflously enough. His best work is contained in the twenty-two sonnets of which those "To a Great Singer" "To the Sun" "To a Musician" (1) are the best. There is also a very pretty "Poem of the Sea," and a most meritorious apostrophe to the village of Killin on Loch Tay.



— **BOTANY IN HELIGOLAND.**—The German Government has established a biological Institute on the island of Heligoland, and has appointed Dr. Kuekuck its Botanical Director.

— **DEVON AND EXETER GARDENERS' ASSOCIATION.**—At a recent meeting of this Association Mr. William Andrews, gardener to Mrs. Biddell, Duryard, read an interesting paper on "Kitchen Gardening." Mr. Andrews opened his subject with a warning to young men just launching into the gardening world against the neglect of outdoor work.

— **THE MOSS HERBARIUM** of Dr. Rehmann and Hepaticæ herbarium of Dr. Gottsche have passed into the possession of the Botanical Museum of Berlin; the Botanical Museum of the University of Vienna has acquired the moss herbarium of Hoppe; and the Botanical Institute of the German University at Prague the greater part of the valuable library of Prof. Wilkomm.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the ordinary meeting of the Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 15th instant, at 7 p.m., a lecture will be given by Mr. Shelford Bidwell, F.R.S., on "Some Meteorological Problems," which will be illustrated by experiments. Fellows may introduce visitors.—WILLIAM MARRIOTT, *Assistant Secretary*.

— **GARDENING APPOINTMENTS.**—Mr. A. Drewitt, for three years foreman at Ketton Hall Gardens, near Stamford, has been appointed gardener to Mrs. Creyke, Holbrook Park, Horsham, Sussex. Mr. C. Elliott, for the past three years foreman in The Gardens, Underley Hall, and formerly at Drumlanrig, has been appointed head gardener to Mrs. Wilson, Luneville, Torquay. Mr. J. Wyke, late gardener and steward to E. P. Westby, Esq., Roebuck Castle, Dundrum, Co. Dublin, has been appointed gardener to the Earl of Clonmel, Bishop's Court, Straffan, Co. Kildare.

— **JOHNSON'S GARDENERS' DICTIONARY.**—As announced in a previous issue, a revised edition of this useful book is being published in eight monthly parts by Messrs. G. Bell & Son, York Street, Covent Garden, and the first instalment to hand shows that the work has been well accomplished. This part comprises 128 pages, and although the arrangement hitherto adopted has been adhered to, several important additions and alterations are noticeable. Many of the cultural directions have been re-written and brought up to date, whilst references as to where illustrations of many of the plants described may be found are also given.

— **WAKEFIELD PAXTON SOCIETY.**—At the recent meeting of this Society the Secretary, Mr. G. W. Fallas, gave the fourth of the series of papers on "Elementary Botany," describing the growth of plants and the materials of which they are composed. He explained how the leaves breathe in from the atmosphere and the roots absorb from the soil the necessary elements, and how these meet and are transformed in the cellular structures of the stem into the nutrition which is thus distributed throughout the plant. Mr. Fallas very lucidly set forth these intricate processes, accompanying his exposition with sketches on a blackboard.

— **THE BIRMINGHAM GARDENERS' ASSOCIATION.**—At the last meeting Mr. G. A. Bishop, gardener to S. T. Mander, Esq., Wolverhampton, and whose silver medal essay is appearing in instalments in our pages, read an exhaustive paper on "Chemistry as Applied to Gardening," and with the aid of chemical experiments, afforded much valuable information to a large number present. He especially emphasised the necessity for acquiring a knowledge of the chemical ingredients of soils, and answered a number of questions put to him. A very hearty vote of thanks was accorded Mr. Bishop for the paper.

— **A HANDSOME LEGACY.**—Mr. Hughes, the Hon. Secretary, announced at the above meeting a handsome legacy of £300, through him, to be devoted to the Association, and he is handing it over to the trustees (of which he is one) of the valuable library and other property of the Society, to be dealt with as they think best. Mr. Hughes exhibited at the same meeting a very fine well bloomed specimen of *Dendrobium Pierardi*, with a profusion of closely flowered strong growths. Messrs. Hewitt & Co. of the Nurseries, Solihull, exhibited several examples of Barbe du Capucin or Chicory, fit for use, and it was a surprise to many, as they were so fine. The seed was sown early last spring, and the young plants transplanted, and grown as Seakale is. The roots were lifted early in the winter and forced like Seakale, the crowns showing great strength of growth. As a winter salad it is invaluable, and so easily grown.—W. D.

— **CHASSELAS NAPOLEON GRAPE.**—Under this name a London firm is advertising a Grape said to be a new white seedling, but no parentage is given. I have known a Grape of this name—exactly corresponding with the description given—for more than thirty years, and to the best of my recollection it formed one of a collection sent to a continental exhibition by my brother from Dalkeith well on for thirty years since.—D. THOMSON, *Drumlanrig*.

— **THE YORK GALA.**—This is always one of the horticultural features of the year, and that to be held on June 14th, 15th, and 16th, promises to be no exception to the rule. A most liberal schedule of prizes has been provided, £58 being set apart in one class for groups alone. A sum of £42, divided into three prizes, is also offered for a group of ten stove and greenhouse plants (including Orchids) in bloom, and six ornamental foliage plants.

— **IS SOOT A GOOD MANURE?**—Having heard a lecture on manure, I was surprised to hear the lecturer say that soot was of very little use, not worth fetching from your neighbours as a manure. I think that wrong, as I have seen many good changes for the better made on crops in the garden, also with pot plants; in my estimation it has a tendency to make plants grow a dark green healthy colour, and more than that it is very useful in assisting to keep down the larvæ of destructive insects. I should much like to hear some reader's opinion of the manurial power of soot.—W. C.

— **DEATH OF AN ITALIAN BOTANIST.**—We hear with regret of the death of Cav. Giuseppe Antonio Pasquale, for many years Professor of Botany in the University of Naples, and Director of the Botanic Garden. Prof. Pasquale was the author of numerous articles on botany and cognate subjects. His earliest works of which we have cognisance were on the flora of Capri (1840), and the flora of Vesuvius (1842). In 1869 he published a more complete edition. He appears to have been appointed to the post of Director of the Naples Botanic Garden in 1866, and the following year he published a catalogue of the plants cultivated there, together with a brief history of the garden.

— **LATE PLANTING OF POTATOES.**—Your correspondent "S.," p. 152, has misunderstood my remarks anent the late planting of Potatoes. What I meant was that if the sets were properly prepared it would be much better to defer the planting in gardens of any but a few for early use till about the date he mentions—the middle of April. "S." must be aware, however, that in many gardens nearly all the main crop is in the ground early in March, doubtless to save the young shoots which would otherwise be destroyed when the sets are kept in pits. That they run a greater risk from frost and other causes than if they were kept safely under cover for other six weeks is obvious. A standard authority, Thomson's "Gardeners' Assistant," advocates the planting of Potatoes as early in spring as possible, and not later than the beginning of March.—O. C.

— **THE OWLS AND THE VOLES.**—A correspondent writing from Borthwickbrae, Selkirkshire, says:—"Doubtless many of your readers will be interested to know that the mice pest has greatly diminished, if not entirely disappeared, during the last two months. The great abundance of owls, coupled with the very severe weather, has no doubt given them a check. During the severe storm last month the owls, unfortunately, suffered also. The keeper of Alemoor Loch counted over thirty of the short-eared or heather owl, and eight kestrel hawks—some lying dead, others able to fly a few yards only, while several sat until lifted in the hands. Perhaps the alternate snow, thaw, and fresh might freeze up and perish off the mice also. These short-eared owls did not go to the woods to roost, which were close to the Loch, but were in the Willows and Reeds along the edge of the Loch."

— **LEYTON AND DISTRICT HORTICULTURAL SOCIETY.**—A well attended meeting was held on Thursday evening last (2nd inst.) at The Star Coffee Tavern, Broadway, Leyton, for the purpose of forming the above Society. Mr. Fleming of Beekford Villa, Capworth Street, Leyton, took the chair, and over thirty persons enrolled themselves members. The Society consists of amateur and professional gardeners. The following gentlemen were elected as members of the Committee:—Messrs. Cornish Flatman, P. Grugeon, Cox (Secretary to the late Society), Lusby, Linnell, Sanderson, Cummings, Fells, Bull, Lane, Haywood, Miles (Treasurer of Hazlewood, Lea Bridge Road). The next monthly meeting takes place on Thursday evening at eight o'clock, April 13th. Mr. Barnes, 1, Hope Villas, Capworth Street, Leyton, is the Secretary.



— THE TOTAL RAINFALL AT ABBOT'S LEIGH, HAYWARDS HEATH, SUSSEX, for February was 3.29 inches, being 0.89 inch above the average. The heaviest fall was 0.57 inch on the 20th. Rain fell on twenty-four days. The maximum temperature was 53° on the 19th, minimum 23° on the 6th; mean maximum in the shade 46.1°, mean minimum 35°; mean temperature 40.5°, 3° above the average. Mean maximum in the sun 52°. Fruit buds and vegetation generally in a very forward condition.—R. I.

— RAINFALL IN FEBRUARY. — During February we registered 3.84 inches, having but eight dry days during the whole month. There were twenty dry days during the corresponding month of last year, when our register gave but 0.99 inch. There is a wide contrast between this month just passed as compared with that of 1891, when not a single drop of rain fell during the whole month. To those who are dependant upon the rainfall for their water supply the abundant rain comes as a boon in the early months of the year. To tree planters a wet February is always welcome.—E. MOLYNEUX.

— THE WEATHER DURING FEBRUARY AT RIPLEY, YORKS.— This month was notable for the variableness of the barometer, it rising and falling rapidly and frequently. The highest reading was 30.40 on the 4th and 5th; lowest, 28.56 on 26th; on three other occasions it fell below 29.00. The weather, as a whole, was very dull and cold, from the 4th to the 6th being foggy. Strong wind was prevalent from the 8th to the 12th. Snow fell heavily during the night of the 25th, and up to noon on the 26th, which when reduced to water was equivalent to 1.03 inch of rain. Mean reading of barometer, 29.61. Mean maximum temperature, 43.6°; mean minimum temperature, 28.9°; mean temperature, 36.3°. Total rainfall, 3.50 inches, which fell on twenty-two days; 18° of frost was registered on morning of 28th.—J. TUNNINGTON, *Ripley Castle Gardens*.

— THE WEATHER LAST MONTH — February was very changeable, without any severe frost, and but little snow in this district. It was remarkable for two very low readings of the barometer—viz, 28.76 at 2 P.M. on 21st, and 28.78 at 4 P.M. on 26th. The wind was in a westerly direction nineteen days. We had only seven bright days, one of which was clear. The barometer was highest, 30.39, at 9 P.M. on 4th; lowest, 28.76, at 2 P.M. on 21st. Total rainfall was 2.10 inches, which fell on nineteen days, the greatest daily fall being 0.41 inch on the 21st; the total fall is 0.38 inch above the average for the month. Highest shade temperature was 59° on 19th, lowest 24° on 6th; lowest on grass, 16° on 6th; mean of daily maximum 47.58°, mean daily minimum 34.43°; mean temperature of the month, 40.10°. The garden spring ran 24 gallons per minute on the 28th.—W. H. DIVERS, *Ketton Hall Gardens, Stamford*.

— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, February, 1893.—Mean temperature of month, 40.2°. Maximum on the 19th, 58.2°; minimum on the 28th, 24.7°. Maximum in the sun on the 19th, 97°; minimum on the grass on the 6th, 17.7°. Mean temperature of the air at 9 A.M., 39.4°. Mean temperature of the soil 1 foot deep, 39°. Nights below 32°, in shade seven, on grass nineteen. Sunshine, total duration in month, fifty-eight hours, or 21 per cent. of possible duration. We had ten sunless days. Total rainfall, 2.66 inches; rain fell on twenty days. Average velocity of wind 13.7 miles per hour; velocity exceeded 400 miles on eight days; velocity fell short of 100 miles on one day. Approximate averages for February.—Mean temperature, 39.5°; sunshine, fifty-six hours; rainfall 1.58 inch. A mild, wet, and stormy month, with average sunshine. We have to go back to 1885 for a warmer February, and to 1883 for a wetter one.—J. MALLENDER.

— PRIMULAS IN AMERICA.—Noting your reference (February 2nd, page 92) to the *Primula* illustrations in a recent issue of the *American Florist*, allow me to state that a large proportion of the "life size" blooms shown represent the best English strains, being from seed furnished by Messrs. Carter, Cannell, Laing, Bull, and others, for competition at the Columbian Exposition.—E. L. TAPLIN-ROYLE, *Chicago*. [Granted; but the fact remains that the photographs referred to, however excellent as works of art, do not by any means represent either the vigour of plants or size of blooms that are seen in hundreds of greenhouses in the "old country," as well as in competition at shows. The very best plants portrayed in our excellent contemporary would not have the remotest chance of securing a third prize at shows where English *Primula* culture is well represented. We are great admirers of the

enterprise and cultural skill displayed in the production of many plants and crops by our kinsmen on the "other side," and we feel we are doing them a kindness in pointing out an instance of their shortcomings when an opportunity occurs, as the best method of stimulating to greater excellence—in this instance, in *Primulas*. Possibly, however, the American climate may not be so favourable to the well-being of the plants as our cooler and more cloudy summers are.]

— LILIES *versus* ROSES. — The Rev. David R. Williamson, minister at Kirkmaiden, Wigtonshire, N.B., and author of "Poems of Nature and Life," writes to us as follows:—"I have read with much pleasure Dr. Wallace's recent article upon this subject in the *Journal of Horticulture*, and I entirely coincide with his observations. I yield to no writer in my estimate of the value and beauty of the Rose, of which I have all the finest modern varieties; but in substance, purity, stateliness, and especially in endurance of fragrance and of colour, the Lily is held in greater favour with me than the Rose. I cultivate in my sheltered garden nearly all the most stately and beautiful existing species of Japanese, Indian, and Levantine *Liliums*. I may add the young and gifted Duchess of Sutherland, who has recently become a great cultivator of Japanese *Liliums*, recently ordered Dr. Wallace's book at my suggestion, and tells me she has been reading it with exceptional interest."

— THE BLACK CURRANT MITE. — Noticing that the Board of Agriculture are recommending Paris green for this pest, allow me to make a suggestion that I am recommending in connection with technical instruction under the Worcestershire County Council. The difficulty of reaching these mites with insecticides or poisons is that, being protected with the outer covering of the buds, nothing can reach them in the way of washes. By picking the infested buds off now (which are easily detected, and might give employment to children and women) and burning them, bushes can be cleared. I begged an infested bush some years ago, and planted it away from all others in order that I might have specimens for microscopical work. The bush was picked occasionally, and now I have none for such work, and have to obtain specimens from a long distance. The picking plan is adopted at Todington and other fruit plantations with good effects. A large garden planted with Currants a few years ago in this neighbourhood have lately been grubbed up and the bushes burnt, which the owner might with little expense have turned to good account.—J. HIAM, *Astwood Bank*.

— THE HYBRIDISATION OF PLANTS.—Dr. John H. Wilson, in delivering the concluding lecture of a series on the "Hybridisation and Improvement of Plants," given under the auspices of the Scottish Horticultural Association recently, said the difficulty attending the correct crossing of *Chrysanthemums*, *Dahlias*, and the like, was due to the minute size of the floral organs. In most *Primroses* dimorphism of the flowers was an aid to cross-fertilisation. The method of reproduction in Ferns was described, and the possibility of their hybridisation indicated. In reviewing the course, the lecturer said that while a very great number of hybrids had been raised, and in many cases much improvement effected from an æsthetic and commercial point of view, the field was practically inexhaustible. With changing fashions and tastes the demand for new varieties of flowers and fruits would continue. It was a mistake to fancy that the only places where new varieties could be raised were in great nurseries and botanic gardens, for first-rate work has been done in many small establishments. The successful raiser of new plants must combine a knowledge of the structure and functions of flowers with the best methods of culture of both parents and progeny.

— DIONÆA MUSCIPULA. — In the first part of the new "Contributions from the Botanical Laboratory of the University of Pennsylvania," Dr. J. M. Macfarlane confirms the statement that, to produce closure of the leaf of *Dionæa muscipula*, two distinct stimuli are required, which may be communicated to the same hair, or to different hairs on the same half, or to hairs on opposite halves of the leaf. He regards the leaf, previous to secretion, as in a state of tetanic contraction, resulting from a series of stimuli, which may either be partially or entirely mechanical, thermal, luminous, chemical, or electric. The so-called "hairs" are not true hairs, but emergences, and their structure is described in detail. Each consists of three distinct regions, the joint, the base, and the shaft. While previous observations, such as those of Darwin and Prof. Burdon Sanderson, have been made on plants of *Dionæa* under abnormal conditions of cultivation, Macfarlane's, says "Nature," are especially valuable as



having been made on the plant in its native condition ; and this is also the case with those of Mr. Bashford Dean, contributed to the Transactions of the New York Academy of Sciences. Mr. Dean states that there is a marked difference in the irritability of different leaves ; that the leaves usually fail in capturing the larger and more active insects ; that even small insects constantly escape ; and that the leaf repeatedly closes on inorganic and vegetable objects.

— THE LONG-TAILED TIT.—These are among our very best friends in orchards, and fruit growers cannot be too jealous of inter-

accused the other evening of being among our worst enemies in taking and " knocking-off " fruit-bloom buds. I told the man a greater mistake was never uttered. If these erroneous statements are not contradicted children are only encouraged to rob the nests of these wonderful architects.—J. HIAM.

### BEGONIA DECORA.

THIS charming ornamental foliaged Begonia was exhibited by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, at the Drill Hall on



FIG. 42.—BEGONIA DECORA.

ference in nesting during the coming season. They may safely be said to be " worth their weight in gold " every year. I was recently watching a pair flitting from tree to tree, and at last one set to pecking at a small bough near the top of an Apple tree. Being determined to see what it was feeding on, I drove it hastily away, and three times it was as determined to have its dinner in defiance of me. I mounted the tree and found a large patch of moths' eggs laid at the identical spot, about 100 packed on end in true lines, and covered with a cushion-like covering of fine hairs, apparently those of the March moth, *Anisopteryx resularia* ; the marks left on the bark left no doubt as to the eggs having been recently taken. I again watched them and again drove one from its feeding-ground, and mounted to examine the exact spot, and found it taking the eggs of the cockle scale. I heard these birds

November 15th, last year, and the Floral Committee of the Royal Horticultural Society deemed it worthy of a first-class certificate. As will be seen by referring to the illustration (fig. 42) the leaves are medium-sized, varying from 3 to 4 inches in length, and are of an attractive character. The midribs and veins are light green, the upper surface of the young leaves being rough and bright brown, changing to a darker or chocolate shade ; the under surface of the foliage is a bright claret colour. *Begonia decora* is a dwarf growing species from Penang, and was introduced by Messrs. J. Veitch & Sons. It has creeping rhizomes, and under good cultivation the pretty marked foliage will form a welcome addition to stove ornamental leaved plants. The leaves are covered with papillæ, each of which has a terminal hair.





## RUGBY AND DISTRICT CHRYSANTHEMUM SOCIETY.

THE seventh annual Exhibition of this Society will take place on November 15th and 16th, and from the schedule to hand we observe some liberal prizes are offered.

## THE HULL SCHEDULE.

THE Hull and East Riding Chrysanthemum Society have issued a full and excellent schedule of prizes for the next Show, which opens on November 15th. Besides the 20-guinea challenge cup in the group class, with money prizes of £6, £5, £4, and £2, silver cups with £10, £5, and £2 10s. prizes are offered for twenty-four Japanese blooms, also for twenty-four incurved blooms in separate classes. An entirely new class is also provided, with prizes of £5 5s., £3, and £1 10s., described as follows:—Twenty-four blooms, Japanese, distinct, arranged for effect, and set up in any manner the exhibitor desires, with or without Chrysanthemum or other foliage, on a table space not exceeding 6 feet in length by 2 feet 6 inches in width. The object of this class is to introduce a more tasteful system of staging highly developed flowers, therefore first quality blooms are indispensable, and their merits will be estimated by points in the usual manner. At the same time artistic arrangement is essential, and will be fully considered by the judges and receive due weight in the adjudication.

## JUDGING CUT BLOOMS.

IN addition to the method of judging cut blooms which I condemned on page 180 of the *Journal of Horticulture* there is still another that I do not generally approve of, although under special circumstances something may be said in its favour. I refer to the system of attaching so much weight to the greater variety of colours that one stand may contain over its opponent. It is not an uncommon occurrence to hear that "Mr. So and So was an easy first by the greater variety of colour his stand contained." My contention is the blooms should be examined individually and carefully noted accordingly if the competition is keen, not allowing the appearance of the stand, as a whole, to have so much influence over the minds of the judges, as I fear in many cases it does.

I agree when the blooms individually are close as regards merit that the greater variety of colour should then score a point or two, sufficient to place the balance in favour; but where there exists a wide contrast in point of the individual quality, then, I think, the great leaning to the extended variety in colour is a mistake. Where the conditions of the class is clearly defined, that the prizes are offered for so many distinct blooms, then they ought to be distinctly examined and appraised according to their merit. For example, we may take a stand of twenty-four blooms in not less than eighteen varieties. No judge would award the premier prize to an exhibitor who staged the whole twenty-four blooms, distinct, simply because they were dissimilar and of inferior quality. The exhibitor who complies with the stipulated conditions of eighteen varieties, and fills the remainder of the class with blooms of high quality, even if they are duplicates, should win premier honours. As long as a competitor conforms to the expressed conditions of the class he is at liberty to employ what extra blooms he thinks best. The judges who make their awards based on this method are, in my opinion, wrong, and possess taste which shows a decided leaning to so-called artistic ideas rather than to carrying out the practical definitions that are, as a rule, so clearly defined in the schedule of prizes.

I expect to find a conflict of opinion as to the soundness of my expressed view on this phase of judging Chrysanthemums. I hope, therefore, that those persons who object to my dictum will remember that where the competing stands are close in point of individual merit of the blooms that I approve of the plan of awarding prizes for variety in colour, but not otherwise.—SADOC.

## NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the General Committee of this Society was held on Monday evening last at Anderton's Hotel, when Mr. E. C. Jukes occupied the chair, owing to the unavoidable absence of Mr. Ballantine. The Chairman said he was pleased to see so many representatives of affiliated societies present, and assured them that they would always be welcome and their suggestions carefully considered. The minutes of the previous meeting were then read and confirmed, and a letter from Sir Edwin Saunders expressing thanks for having once more been elected to the presidency of the Society. The Secretary announced that the schedule for the current year was in the printer's hands, and he hoped the same would soon be ready for distribution.

The most important part of the business was the election of new members to the Floral Committee. Hitherto, it has consisted of fifteen members, one-third of whom retire annually, but are eligible for re-election. By the new rule the constitution of this body is slightly altered, there being now eighteen members, and a chairman elected from among that number. There were therefore on this occasion eight members to be elected, five to replace those retiring, and an additional three to make up the total prescribed by the new rule. Fourteen candidates in all were nominated, and as there is no rule as to the

ballot being employed, some discussion as to its legality in this instance was raised. Mr. Wright of the Temple objected to it on the ground of its secrecy, and thought members ought not to be ashamed to hold up their hands. The Chairman was of opinion that by that method no one could tell whether a member voted for more than the proper number of candidates required to fill the vacancies. Mr. Geo. Stevens moved that the votes be taken by a show of hands, but Mr. G. A. Addison made an amendment to the effect that the ballot be resorted to, and his amendment was easily carried. Messrs. H. A. Needs and T. W. Sanders were appointed scrutineers, and announced the result as follows—Messrs. C. Gibson, H. J. Jones, G. Gordon, W. E. Boyce, C. E. Shea, W. H. Fowler, H. Cannell, and E. Beckett.

The reserve fund, which stood at £14 15s. 6d. a few weeks since, has been increased to £19 9s. 6d., and the Secretary stated he would like to see the amount increased still further that evening. Mr. Fowler at once offered £5, Mr. Jones £1, Messrs. J. Laing & Son £1 ls., Mr. Harland of Hull £1 ls., and Mr. Owen £6 10s., originally intended for special prizes for new classes in the schedule. It is pleasing to record that the reserve fund was in a few minutes increased to the sum of £34 1s. 6d.

The election of Chairman for the Floral Committee for 1893 resulted in Mr. C. E. Shea being appointed. Only two names were proposed—viz., Mr. Shea and Mr. G. Gordon, the latter being defeated by one vote only. The meetings of the Floral Committee will be held at the Royal Aquarium on 6th and 27th September, 11th and 25th October, 8th and 22nd November, 5th and 13th December. The Catalogue Committee, consisting of Mr. E. C. Jukes, Mr. W. H. Fowler, Mr. H. Shoesmith, Mr. A. Taylor, and Mr. C. Harman Payne were elected, and this brought the meeting to a close.

THE controversy which has lately been going on *re* the National Chrysanthemum Society has been interesting not only to those who make the growth of Chrysanthemums a speciality, but doubtless also to others, who, like myself, take a more general interest in these matters. I have carefully read the report of the Society's last meeting, and do not feel myself able to agree with the opinion you express when you say in effect that Mr. Addison's motion for a rule providing for the expulsion of any member guilty of irregular or dishonourable conduct is fairly met by a rule which provides for the erasure of the names of members who are in arrears.

In view of the still unanswered charges against a member of the Floral Committee *re* the Beauty of Exmouth case, and the proven charge against a member of the Floral Committee *re* the Wells case, it is abundantly clear that it is necessary some stringent rule should be made, and not only made but enforced, if the N.C.S. is to hold its position as a "National" Society. "National" characteristics are generally believed to be manliness, pluck, and upright conduct. Surely the conduct of which the member referred to has been found guilty of in the one case, and he, or another, accused of in the other case, is not deserving of any of the above adjectives; and to go still further, it does not seem too clear that the Society generally too well deserves them if it is to allow one of its members to sneak behind it under the pretence that there was danger of a libel suit. Now, forsooth, it is argued that it is difficult to decide what constitutes dishonourable conduct, and yet the member who put forward this argument would no doubt feel mightily offended if anyone should venture to cast a doubt upon his claims to intelligence. But what sensible man could have a doubt as to the want of honour in the Wells case, which has been proved, or in the Beauty of Exmouth case, if the charges are true; and that the Society should avoid putting the truth of these to the test gives to outsiders at least a strong impression of their being well founded; let me repeat the charge in case some of your readers should have forgotten it. It is stated that a member of the Floral Committee opposed the granting of a certificate to an advanced type of Chrysanthemum, and afterwards coolly informs the exhibitor that he did so because this variety would cut out one of his introduction; and he further offers to buy Beauty of Exmouth at a large price. In order to clear the Society of the slur which has been thrown upon it, Mr. W. H. Fowler suggested that the case should be fully gone into, both parties waiving their legal rights. The accuser agrees at once, the accused makes no sign; what inference is to be drawn? If the Society has gained strength by the controversy, why the bitterness with which Mr. Dean pointed out that two provincial growers who were proposed as members of the Committee had taken part in it, and suggested that therefore they ought not to be elected? As a matter of fact they were not elected.—G. MATTHEW.

BEING a reader of the *Journal of Horticulture* for over thirty years, and a member of the above Society, though not knowing any member of the Committee, I think enough space has been given to Messrs. Godfrey & Co. and the N.C.S. Committee. Doubtless, Mr. Godfrey may be right in advertising his Beauty of Exmouth, which he mentions four times on page 180.

I see Mr. Godfrey aspires to one of the National's "very best" medals. I assure him I for one will attend the meetings, and vote him a Holmes' Memorial cup, on condition that he publish the letter we have heard so much of lately in his pamphlet, so that we who are not in the "know" may judge if the best is being done by all the members of the Committee for such a good cause as the improvement of Chrysanthemums. I am sorry that some readers seem to think you favour the Godfrey-Wells side of the dispute, but I presume they are allowed to state their case, as are others to refute it.

Regarding discussion on matters horticultural, let us have plenty of



it, but no personalities; and may I ask all who have taken part in the discussion to show their goodwill towards the National Chrysanthemum Society, by subscribing one guinea to the Reserve Fund, which I see is very low; also try to attend more meetings of the Committee, and not be talked down, but press them with fact or fancies.—JAS. HAMILTON, *Byrkeley, Burton-on-Trent*.

[Perhaps the best evidence that we have favoured neither side in this discussion is Mr. Matthew's suggestion that we have expressed an opinion in favour of the N.C.S. as against Mr. Addison's motion on the one hand, and Mr. Hamilton's indication that we have favoured the Godfrey-Wells side on the other. We favour what is right on whichever side this may be found, and if Mr. Godfrey is proved wrong he will quickly find that his action will not have the sanction of the *Journal of Horticulture*; but there has been no real investigation.

This discussion will do great good, in fact we have the satisfaction of knowing on the Chairman's authority that it has resulted in the accession of strength to the N.C.S. We publish Mr. Hamilton's letter as readily as any that have been sent to us, and we fully agree with him in the desirability of increasing the Reserve Fund of the Society.

We have had expressions of opinion from various parts of the country approving of the manner in which this discussion has been conducted, and we cite a few lines from the letter of a Liverpool correspondent as fairly typical of others from districts in which the discussion was regarded on its merits alone. "The straightforward way in which you have dealt with the Godfrey and other cases has earned for you hearty commendation from your numerous readers of the *Journal* here."

That is sufficient; and now that both sides have been heard fully, and as Mr. Godfrey has announced his intention of publishing in "book form" the correspondence at his disposal bearing on the whole question in dispute, perhaps it would facilitate matters if readers who desire to express any further views would do so direct to Exmouth for the purpose of his compilation. We do not say that no further letters will be inserted in our columns, but suggest the alternative as possibly the better way of expediting the issue of the work in contemplation by Mr. Godfrey. A critique on the report and balance-sheet of the N.C.S. cannot be inserted this week.]

### GRAPES AT FLOORS CASTLE.

As I was at Floors Gardens with the late Mr. Rose, who was appointed gardener to the Queen at Windsor Castle, and also Mr. Knight, now with the King of the Belgians at Laeken, Brussels, I may tell "M." (page 117) whom I believe I know well, that in Mr. Knight's time the gardens were greatly altered and more glass erected. Vines and Peaches were increased, and for Pines a 160 feet range was erected. They are now done away with, and the houses are used for growing large numbers of choice cut flowers, such as Gardenias, Eucharis, and Carnations, which are now of greater value.

The range of houses where the unfortunate vinery was situated was cleared out by Mr. Knight, and planted with Vines from end to end in June, 1874, on the occasion of a memorable event in the Roxburghe family. The Muscats of Alexandria and Lady Downe's produced first-rate fruit, and these varieties kept well till the spring, the Muscats to March, and the Lady Downe's to May, but cutting them from the Vines in December, and leaving them in bottles on the edges of the fruit-room shelves, as also done in Mr. Rose's time. The Grapes referred to on page 31 are from the late house in this range. While in the vicinity of Kelso the other day I called at Floors, and Mr. Street kindly showed me the new Grape-room and its contents, which are certainly very creditable to him, and not at all flattered by the photograph reproduced in the *Journal of Horticulture* for January 12th. The bunches were medium sized and very large in berry, and the proper colour to keep for a long time. The Grape-room is certainly well situated and convenient, but Mr. Street takes the credit of having altered and improved the bottle-racks to hold larger bottles in better position, so that the bunches can be more readily examined all round.

As regards the remarks by "M." about the Broxmouth Muscats I may state that the same old Vine and plants from it produce prize Grapes occasionally, which are never disputed now. The large bunches never keep long, but those of smaller size, and berries well thinned out, keep in good condition the same as elsewhere.

I may mention that early Grapes were once cut on the 25th of April from an early division in the same range. Black Hamburg and Foster's Seedling were the varieties.—WM. MCKELVIE, *Broxmouth Gardens, Dunbar, N.B.*

MR. GOODACRE'S letter on the above subject in your last issue (page 172) goes far afield for "facts sufficient to show that Grapes have been successfully kept before the now celebrated room was made at Floors." I was not aware there had been any question raised in your columns as to the unsuccessful keeping of Grapes elsewhere, or that the "plan adopted" at Floors was a new one; and it certainly did not need Mr. Goodacre's "facts" to demonstrate the veriest of platitudes—namely, that late Grapes are to be found at most establishments where any pretence is made at Grape growing, and where the bottling system has been followed. What useful purpose is served by keeping Grapes in bottles for twelve months, as Mr. Goodacre relates, is not quite so apparent, unless it be someone's idiosyncrasy.

But the real object of his remarks is so ill-disguised that the only inference to be drawn from them is that he has been furnished with a brief in defence of the "plan adopted" lately at Floors; moreover

there is so much special pleading in all he says about the present gardener there and his predecessor being "pupils in succession at Penrhyn," that the irresistible conclusion is that his letter is intended to play the one off against the other.

The question as to their indebtedness to Mr. Speed's tuition for their success in Grape-keeping, or other branches of gardening, is one they will each decide as they think fit. That Mr. Speed, beside being a very estimable man, is a thorough good gardener, and that the gardens at Penrhyn are kept in a condition commensurate with his practical skill and long standing there, were, I believe, well known in the gardening world before Mr. Goodacre reflected on them the light of his genius.

But "M." (page 117) as well as Mr. Goodacre is in error in supposing there are any Vines at Floors planted thirty years ago, and consequently the latter's desire to award credit comes somewhat prematurely. There were two lean-to vineries and one side of a span-roofed house at Floors up to the time of Mr. MacKellar's leaving. That was planted, I believe, during Mr. Knight's time, but the borders of these, both inside and out, were entirely renewed by Mr. MacKellar, and for three days the Vine roots were tied up in mats without a handful of soil while the border was being cemented, drained, and re-made. The other Vines on the place were planted by him entirely.

Whether the early vinery that "M." refers to as being so unsatisfactory in his time was planted again by Mr. Knight I do not know, but it was considered so unsatisfactory when Mr. MacKellar took charge that the Vines were cut out and replanted, and it was a most successful house during his time. I should say, however, that the premature breaking that "M." speaks of was found to be a very "local influence" indeed, for it consisted in the bottom of the border being perforated with flow and return pipes connected to Orchid house and stoves the other side of it. This Mr. MacKellar had altered by substituting one large boiler for the five that originally did the work, and by forming one channel closely built in brick and cement for the flow and return pipes.—N. F. BARNES, *Eaton Gardens*.

### DOUBLE ZINNIAS.

ELDON do we see Double Zinnias well cultivated. The great mistake made is in raising the plants in too much heat, thus enfeebling their constitution. Few plants contain such a variety of colours as Zinnias, which includes all shades from creamy white to the most intense velvety crimson. In addition to their value in the flower garden, Zinnias are useful in a cut state, lending themselves to any form of decoration. The flowers keep quite fresh a long time in water. It is, however, as decorative plants in the flower garden that I think them most useful; not dotted here and there in the borders amongst other things, but occupying beds.

The first week in March is a good time to sow the seed, providing it is done in a cool frame where the growth will be slow, resulting in sturdy plants. From these satisfactory results may be expected. Sow the seed in moist, sandy soil in shallow boxes or seed pans. Keep the frame closed and shaded until the seedlings appear, when all available light should be given and air admitted cautiously, increasing it as growth progresses and the weather is favourable. When the plants are 2 inches high they should be pricked 2 inches apart in another frame. A layer of coal ashes forms a good base for the frame to stand upon; over this spread partly decayed horse manure 2 inches thick, into which the roots will run, enabling the plants to be lifted with earth adhering to them. On the manure spread sandy soil 2 inches thick, into which the plants should be dibbled. Careful watering and slight shade, combined with keeping the frame closed for a few days, will enable the plants to become established. Directly new growth is being made abundance of air ought to be given to keep the plants sturdy, drawing off the lights on all favourable occasions.

Although Zinnias like tolerably fertile soil, it must not be made too rich, or the growth will be sappy and not of the right kind to give a full crop of flowers. The soil should be deeply dug, adding, where necessary, partly decayed horse manure in the case of heavy soil; road grit and leaf mould being also valuable in this case. Where the natural soil is light and sandy, cow manure induces a robust and productive growth. Choose a showery day for planting, and put the plants not less than 10 inches apart. It is wise to peg the plants down once or even twice, a better effect being produced by having an even growth all over the bed. If the plants are inserted on the slope with a trowel, the work of pegging them down is facilitated, otherwise there is a risk of breaking the stems.

When Zinnias are cultivated mainly for supplying cut bloom it is not necessary to peg down the shoots. The ground ought to be kept free from weeds by frequent stirring with a hoe. During dry weather water in abundance given to the roots will produce free growth, and consequently a fuller crop of blooms.—E. MOLYNEUX.

### BRUSSELS SPROUTS.

"BRASSICA" (page 183) is not correct in saying that anyone successful in raising Brussels Sprouts in the open will give to anything that may be written respecting raising plants under glass scant consideration. I trust there is no gardener worthy of the name who does not recognise the great importance of dealing with climatic conditions in a sensible way; and whilst it would be folly to raise Brassicas of any sort under glass in one place it is absolutely needful to sow some kinds under glass



elsewhere. I do not for one moment recognise the assumption that because Brussels Sprouts may be raised under glass that therefore the plants are less hardy. That is too absurd.

The character of the land is in no sense changed because of such temporary shelter. Were the crop grown under glass absolutely, we could imagine that in time the native constitution of Brassicas would be weakened, but raising the seedlings under glass because of the exigencies of the position or climate, or season, which is but temporary culture under protection, is too trivial to have any weakening effect. I have seen many acres of Brussels plants put out and as hardy as any others raised outdoors, but so raised under glass because market growers have regarded earliness as of the first importance.

Brussels Sprouts, as a rule, are grown far too grossly in gardens. They should have soil deeply worked to give ample root room, but not enriched with too much strong manure and the surface should be firm. I never see in gardens such firm hardy stems and perfect sprouts as I find in the fields.—D.

For my part I think it needs but little argument to convince any person of the great advantage gained by sowing the seed under glass as compared with sowing it out of doors if they will carefully test the matter themselves. I have to-day (March 2nd) sown seed of both the varieties we grow—Sutton's Matchless and a strain of imported seed. This latter is an excellent variety to grow for those who prefer small, hard green sprouts to the extra large and sometimes coarse Cabbage-like productions.

It is useless to expect a full crop of this vegetable if the plants are not put out early; my experience is that the earlier in the season the better. A long season of growth is then obtained, and a full crop of sprouts assured.—E. M.

## SUNNY SANDRINGHAM.—II.

(Concluded from page 180.)

A NATURAL continuation to the notes on Sandringham published a week ago will be a description of the accommodation provided for the under gardeners. It is questionable if there are half a dozen places in the country where any approach has been made to the conditions which have been provided for the health and comfort of the journeymen. The range of buildings, of which the bothy forms the centre, is 230 yards long, and has been erected under Mr. MacKellar's direction. On the ground floor is a large mess room, easily capable of accommodating the twelve men who occupy the bothy, and two sitting-rooms, one for the foremen, the other, a large apartment, for the use of the remaining assistants. The rooms are carpeted and comfortably furnished, pictures adorning the walls. There is likewise a roomy kitchen with hot and cold water and a splendid range, presided over by a housekeeper, who also has rooms provided for her. Upstairs there are a dozen bedrooms, one for each man, all carpeted and furnished in a most comfortable manner. At the end is a magnificent bath-room, with tiled walls, marble slabs, hot and cold water, and every necessary convenience. The sitting-rooms are provided with grates, but all bedrooms included, are warmed by hot-water pipes cased in. It is difficult to think of any reasonable provision which has not been made for the comfort of the gardeners. They are not, as is the case in so many places, relegated to something little better than a shed, but are treated as human beings whose comfort is worth studying, and whom it is an object to train up well-conducted, orderly, and intelligent, fitted, not only by cultural skill, but by polished manners, to occupy high positions in their profession. In this, as in other matters relating to his workmen, the Prince of Wales sets a bright example to the country.

There are other parts of this new range worth referring to. Each building bears a clearly printed description, and the first is the largest of three immense boiler houses and stokeholes. It is 60 feet long and 30 feet high, of which about 15 represent the depth below the ground level. Looking down from the iron platform it is as though surveying the engine room of some great steamer, save that there are huge boilers in place of machinery. The largest, which is fitted with Thomson's patent water bars and cross tubes at the back, is capable of heating upwards of 8000 feet of piping. They have been put in and the system of heating constructed by Messrs. Mackenzie & Moncur. The quantity of piping mentioned indicates about the total length in the plant department alone. The hardness of the water led to great trouble from furring, and Mr. MacKellar has devised a plan by which the rain water falling on the sheds, bothies, and other buildings is collected, pumped into a large cistern, and utilised for feeding the boilers. It is an admirable plan and works well, the turning of a wheel by a lad doing the necessary pumping easily and expeditiously.

The potting houses (to use the familiar term shed would be to do them an injustice) are lofty, clean, well fitted, and warm. The same remark applies to the packing room. The despatch of the large quantities of fruit, vegetables, and flowers entails a good deal of work, and it has been thought worth while here as elsewhere to provide for its performance in reasonable comfort. There is a painters' room and a whitewashed and heated toolhouse, in which the implements are kept bright and clean. Then there is a magnificent Grape room, 23 feet by 16, beautifully fitted, and capable of holding 1500 to 2000 bunches. The walls are lined with and the fittings composed of best pitch pine. The fruit room is another splendid apartment. It is 60 feet long, the door, wall linings, and ceiling being all of pitch pine. This is undoubtedly one of the finest fruit rooms in the world. The appoint-

ments are not only of the best, but are beautifully executed. The same remark might be applied to Mr. MacKellar's office and seed room, with its thirty-three large drawers for seed. On opening one of them—Onions—and glancing over the contents, some idea is gained of the extent of the sowings, for there are several pounds of seed awaiting use. Altogether the range of buildings is unique, and worthy of the establishment to which it belongs.

The kitchen and fruit garden constitutes 14 acres, and is in two divisions, one within the other, each with lofty and well constructed walls. In addition Potatoes are grown in one of the fields, but in consideration of the enormous demand the surprising thing is not the extent of ground devoted to the crops, but the fact that it is sufficient. Nearly the whole of the ground is, however, double cropped. Immense quantities of the leading vegetables, such as Potatoes, Onions, Peas, Cabbages, and Carrots are needed, also of Cauliflowers, Broccoli, Asparagus, and Seakale. There are some splendid quarters of Ellam's Cabbage, some of which have already been cut, and others are hearting. Considering the severity of the winter this is worth noting, and it is a striking testimony to the value of the variety for early work. Broccoli have suffered somewhat, but Leamington and Model have come through the trying weather in excellent condition. Both varieties are highly esteemed. Forcing is extensively carried on. A good deal of Seakale is forced on the ground by autumn earthing, and quantities more, together with Rhubarb, Chicory, and others, are brought on in the large Mushroom house. There is also a range of pits upwards of 400 feet long, excellently constructed, well heated, and divided into seven divisions. These are extremely valuable for early Potatoes, French Beans, Carrots, Turnips, Lettuce, and Radishes, also accommodating bedding Zonal Pelargoniums, Chrysanthemums, and other flowering plants. Violets are also grown in them on a very large scale, and millions of flowers have been gathered during the past winter. These and other fragrant flowers are great favourites with the Princess of Wales.

At the back of the pits is one side of the new outer wall, upwards of 350 yards long, and planted with the best varieties of Pears, Roses occupying the borders in front. I should judge, from the length of wall recently erected, and the number of trees put in, that the extension of the fruit supply has been one of the great objects in view at Sandringham of late. A considerable aggregate length of wall has been built, and all has been planted with strong, healthy trees of selected varieties. Many hundred yards of espaliers have also been put up, and the system adopted is the essence of thoroughness. The strong iron supports have substantial cement foundations, containing the double elements of strength and permanency. The trees have been chosen for the same qualities. They are all developed specimens, furnished with vigorous matured growths, and set with fruit buds. Many hundreds have been planted; indeed, all available space is being filled up with the best material which skill and care can produce. The ultimate result can be safely prophesied. In a very few years the collection of outdoor fruit trees at Sandringham will be a magnificent one, fully capable of meeting the demand for fruit, and in the highest sense worthy of the establishment. Apricots have also been extensively planted, the favourite varieties being Large Early and Powell's Late. More than one wall has been entirely replanted with them. Morello Cherries, two years planted, are in most promising condition, and so are large quarters of Raspberries.

Upwards of 6000 pots of Strawberries are forced, the varieties most largely represented being Vicomtesse Héricart de Thury, James Veitch, La Grosse Sucrée, and Noble. This is a large item in itself and entails a considerable amount of work. A great extension is being made to the Peaches and Nectarines, although the collection already existing is by no means a small one. They are being managed with the greatest skill and judgment, and in due course there will be few private assortments to equal that at Sandringham. Some immense trees, full of fruiting wood, were planted last November and are thoroughly established, so that fine crops may be expected from them this season. All the Peaches on the place, and they include some gigantic old trees, have been replanted during the last two years, the borders having been remade throughout. In the earliest house the fruit is as large as marbles, and the trees bearing it are full of vigour.

The same bold measures are being conducted with the Vines. One large Muscat house is being entirely cleared out and replanted on the most approved principles. Muscat of Alexandria, Black Hamburgh, Lady Downe's, and Black Alicante are represented in the houses adjoining the Peach range, and there are four houses in another part of the garden, the varieties occupying them being Gros Colman, Lady Downe's, Muscat of Alexandria, and Black Hamburgh. The early house was in bloom at the time of my visit, and the Vines were noteworthy for their splendid foliage and healthy appearance. Another house has been planted two years, and although dormant the stout brown canes give great promise. They are upwards of an inch through, and will be lightly fruited this season. It is doubtful if a finer house of young Vines is to be found in the kingdom than this, and it speaks volumes for Mr. MacKellar's skill as a Grape grower. A house of Vines in pots also arrests attention. Thinning had just been commenced, and the plants were furnished with large, well coloured, and substantial leaves. These were raised from eyes last season, and others are just being raised in the same way to succeed them next year. This, giving due weight to the splendid condition of the Vines, represents good work indeed, and reflects great credit on the management.

A brief reference to some of the leading items amongst plants and flowers will show what a severe tax is placed on the resources of the



garden for them alone. Tree Carnations are special favourites with the Royal Family, and thousands are cultivated, including 1000 of *Souvenir de la Malmaison*. Lilliums are another immense item. Of *L. Harrisi* alone several thousands are cultivated, and they are splendidly done. Large quantities are flowered at Christmas, and many others are coming on for Easter. The extent to which these and others are grown might suggest a nursery or market establishment. Lilies of the Valley are forced to the extent of 25,000 or 30,000. *Bouvardias* and *Gardenias* are in great numbers and splendid condition, indeed one observes throughout what a great amount of attention is devoted to fragrant flowers. The quantities of *Roses*, reckoning in both those out of doors and under glass, is enough to stock many a nursery. The leading Teas, such as *Catherine Mermet* and *Niphetos*, are in very strong force. Of *Cyclamens* nearly a thousand are cultivated, together with proportionate quantities of *Primulas*, *Richardias*, *Eucharises*, *Spiræas* and *Poinsettias*; 1500 represent about the quantity of the latter. Immense quantities of bulbs are grown for Easter, and *Narcissi* are forced in thousands.

The collection of Orchids is being steadily increased, and ere long is likely to sustain a considerable development. Already the *East Indian*, *Cœlogyne* and *Cattleya* houses are well furnished, and the plants pictures of health. Palms and foliage plants also constitute an important feature. There are some huge specimens of the former for special use, and abundance of smaller plants for general decorative purposes. Perhaps it is hardly necessary to mention that *Crotons* and *Dracænas* are conspicuous in numbers, for that would be expected, but it may be added that they are in the perfection of health and colour, and a note may also be made of the fact that *Smilax* has a prominent place, the trails being found most useful in table decoration.

I could go on to write about other popular plants, but a general idea has been given of what has to be done in the Sandringham Gardens, and of the manner in which it is performed. On every side is learned the lesson of development. Animated by a desire to render the portion of the estate under his charge worthy of its great name in the highest sense of the term, Mr. MacKellar is doing all that skill, forethought, and energy can accomplish to make it second to none in the kingdom. The chance has come to him which every able and earnest man longs for—that of finding free scope for every good faculty and attribute. He is availing himself of the opportunity by work that is as enduring as it is excellent, and of which the fruits will be enjoyed for many years to come. The encouragement most dear to all gardeners, the interest and appreciation of his Royal employers, is not denied to him—indeed, its stimulus is felt by all workers, from the highest to the lowest. In the atmosphere of peace and contentment which reigns at sunny Sandringham is found a wholesome antidote to the evil suggestions of pessimism. Kind hearts in high places watch over the material comforts and mental pleasures of those who labour, brightening their lives with pleasant privileges and thoughtful acts; and so it is that the sunshine which spreads over the moors and woodlands finds its way into the hearts of those whose work lies amongst them.—W. P. W.

## TWO VERY OLD CARNATIONS.

IN looking over some old volumes of "Curtis's Botanical Magazine" lately I found in the volume for 1793 a coloured plate in excellent condition, with the colours as bright as when used, of what in those days was a wonderfully fine scarlet bizarre *Carnation* named *Franklin's Tartar*, raised by a Mr. Franklin, florist, of Lambeth Marsh, London, a district noted for florists a century and more since. It was considered to be so fine (and it must have been a very fine variety then, for it looks to be a good one now) by the Editor as to have earned the distinction of an illustration in a work in which florists' flowers found no place. Just 100 years have elapsed since this variety was figured.

In a later volume for 1814 there is a coloured illustration of the *Wheat-eared Carnation*, showing the main terminal flower, and one unopened bud only, every other lateral terminating with a *Wheat-ear* like growth, which did not produce the flowers. The colour is of a rosy crimson shade, with darker blotches, serrated edges, and such as our common border flowers are at this day. It is described by the Editor as "a monstrosity, occasioned by the multiplication of the parts of the calyx, and so extremely rare that the great botanist Linnæus remarked that he had hardly seen another instance of it, and he thought it of sufficient importance to give to this variety the name of *Dianthus Caryophyllus imbricatus*." The illustration was made from a bloom in the then famous nursery of Mr. Davy, King's Road, Chelsea. Dr. Hogg may probably have known this variety, and have a remembrance of Mr. Davy, who was so famous in the early part of the century for *Pelargoniums*; and there are old horticulturists who will remember his *Pelargonium Davyanum*. I for one can, and I seem to have some recollection of having seen the *Wheat-eared Carnation* when a boy.—W. D.

[Dr. Hogg remembers Mr. Davy very well, and has grown the *Wheat-eared Carnation*.]

## HARBINGERS OF SPRING.

THERE is every indication of a very forward spring this year. We had our share of rain in February, but the weather altogether was very open and mild. As a result, vegetation seems now springing into activity. Some of the earliest Pears are ready to burst their bloom buds, and also the Apricots and Peaches on walls. The tops of the lofty Elms, in which the rooks are busy building their nests, are assuming the dull sombre crimson shade so characteristic of the tree in the flowering season.

One of the local habitats of the wild Daffodil (*Narcissus pseudo-narcissus*), a place called St. Urian's Copse, near here, is now being ransacked, and lads and lassies are met coming home with bunches of half-open flowers of these Lent Lilies. Some also had flowers of the Marsh Marigold—*Caltha palustris*, or "King Cups," as they are locally called here. Yesterday (March 5th) I also saw two perfect specimens of the Painted Lady butterfly feeding from the flowers of the yellow Coltsfoot (*Tussilago Farfara*).

It may be interesting to know that on Saturday I picked several good Mushrooms out of doors on a sloping bank, wherein some manure had been dug in two years ago, and on the same day more Mushrooms were cut from an open garden near here, both being from a sandy soil—in fact, a drift of sea sand. No doubt the excessive wet had started the dormant spawn into growth, and the mild weather helped them to develop. They were certainly as fine and clean as any I obtained last summer. If we should be favoured with a little lower temperature and drying winds this month to check the somewhat forward buds, we may look for a very favourable fruit season.—C. ORCHARD, *Bembridge, Isle of Wight*.

## USEFUL APPLIANCES.

### ATKINSON'S LEAF SPONGER.

NOT many better helps, in a small way, to gardeners and amateurs are found than in the aphid brush—a pair of brushes face to face, and used in the form of tongs, for sweeping insects off *Roses* and plants; yet this simple appliance is not seen in every greenhouse and garden. Exactly similar in principle is another little help for washing the leaves of plants, "both sides at once." The "sponger" is just what its name implies, and explains itself in the small illustration (fig. 43). With a little practice there is no doubt that such plants as *Palms*, *Crotons*, *Orchids*, and others may be cleansed on both sides of the leaves with this appliance far more expeditiously than in the more tedious old way. The sponger is so simple that it is a wonder it has not been thought of before. It is sent to us by Messrs. Benton & Stone, horticultural brassfounders, Birmingham, and is presumably sold by sundriesmen. Improved syringes are also being introduced by the firm, worked by Stone's adjustable plunger. This plunger has an indiarubber case, with an outer case of cloth, both specially prepared. The prepared rubber ensures the elasticity necessary to produce constant sound working; the cloth retains the oil, ensures smoothness, and prevents corrosion of the rubber with the metal. By arrangement of plates, controlled by a thumbscrew, the plunger can be adjusted to the cylinder, to a perfectly water-tight pressure, and works with ease and smoothness.

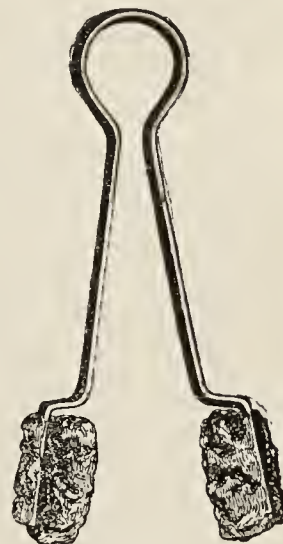


FIG. 43.

## EARLY FLOWERING SHRUBS AT KEW.

**HAMAMELIS ARBOREA.**—There are three or four species of *Hamamelis* known in gardens, one, *H. virginica*, coming from North America and the others from Japan, all of them being perfectly hardy. The most ornamental of any, and the one generally recommended for planting, is the species here noted, which is now represented by flowering specimens in several parts of the Royal Gardens. It was introduced from Japan by a Dutch firm of nurserymen about thirty years ago, and although in its native country it is reported to attain a height of from 15 feet to 20 feet, it flowers quite profusely when only 2 or 3 feet high. At this season the plants are quite leafless, but the bright yellow flowers show up with marked effect against the dark, bare stems. To each flower there are four long, narrow petals which are curiously undulated and twisted, whilst the short, rounded lobes of the calyx are claret-coloured. The aspect of these plants (or, rather, small trees) thickly studded on all the younger branches with the bright, star-like flowers, is at this time of year especially pleasing, and they may be described as being as beautiful as they are curious. To the student of geographical botany the species is interesting as furnishing additional evidence of the marked affinity that exists between the floras of Japan and North America. The *Hamamelis* are popularly known as *Witch Hazels*; the oldest of them, *H. virginica*, which flowers in early winter, was known in English gardens 150 years ago.

**RHODODENDRON PRÆCOX.**—Shrubs flowering out of doors are just now so scarce that one possessing the beauty of this old garden hybrid is rendered especially worthy of notice. In the "American" garden (near the large Temperate House) there is an exceptionally fine specimen, a rounded bush 4 feet high, which is now thickly covered with flowers either partly or fully expanded. This *Rhododendron* was raised by Mr. Davies of Orm-kirk from the dwarf Himalayan species, *R. ciliatum*, crossed with *R. dahuricum*. I do not think there can be any question of its superiority from a horticultural standpoint to either of its parents, for it seems, in a great measure, to combine the good qualities of both. In foliage and habit it more nearly approaches *R. dahuricum*, but its leaves are larger and retained in greater number through the winter; *R. dahuricum* is, indeed, in some of its forms quite



deciduous. The flowers occur in clusters of three or four, and each one is  $1\frac{1}{2}$  inch in diameter, the colour being a bright pinkish purple. If we are favoured with mild weather for the next few weeks this plant will make one of the brightest pictures in the garden, although it must be said there is always the danger of a sharp frost (a few degrees do not materially affect them) prematurely destroying the flowers. For the greenhouse this hybrid is exceptionally valuable, being forced into flower at an early season by very little heat.

**DAPHNE MEZEREUM.**—During late years the popularity of this shrub appears to have in a great measure revived, and not only is the old typical form to be frequently seen, but several of the newer varieties are evidently becoming better known. Whether the species is indigenous to Britain or not is doubtful, but it occurs wild in several parts of England, although nowhere plentifully. Three hundred years ago it was grown by Gerard in his garden at Holborn, and is mentioned in the famous "Herbal" he published near the end of the sixteenth century. At any season of the year its quiet beauty and pleasant fragrance would, I consider, entitle it to a prominent place in the garden, but commencing to flower as it does in January and continuing through the two following months, its merits are very much enhanced. I have seen a plant 6 feet high, but it is only very old specimens that attain that size, and as a rule one sees them averaging from 2 to 3 feet. In well grown plants, which have been thoroughly ripened the previous summer and autumn, the shoots should be covered with the purplish red flowers for 6 inches to 9 inches of their length. The variety *grandiflora* has beautiful purple flowers of exceptional size, and some plants that we have of it have been in bloom since the beginning of the year. Another variety not very often seen has creamy white flowers; it is named *alba*. In cottage gardens, where occasionally very fine examples may be seen, the common *D. mezereum* is known as the Spurge Flax or Dwarf Bay.—W. J. B.

### MILDEW IN VINERIES.

MANY are the reasons assigned for mildew attacking Vines, such as drought at the roots, accompanied with a low moist atmosphere, insufficient ventilation, and so on. In my opinion, draughts of cold air blowing directly across the bunches at the time the Vines are in bloom is one of the causes, if not the principal one, of mildew. My experience is, that this fungus appears in nine cases out of ten when the berries are the size of Peas, and spreads rapidly over the stems of both bunch and berries if not checked by some means.

The method adopted by some persons of admitting air to houses during the time the Vines are in bloom is open to question. At the me late varieties of Grapes are in flower (generally in April) hot sun, accompanied with cold east wind, is very often prevalent. Some cultivators are believers in admitting a free current of air to the vineries through the front ventilators, as well as by those at the top of the house, to effect a free dispersal of the pollen from the stigma. This manner of setting the Grapes may be in their opinion the best; but from experience I can positively say that it is the worst, and certainly one to be avoided by all those who prefer not to have a full crop of mildew to battle with. Last summer I saw many vineries badly infested with this pest, in some instances to such an extent as to render the whole crop useless. This was due in almost every case to indiscreet ventilation occasioning cold draughts of air to be blown directly across the bunches.

Many persons would feel some qualms as to whether the bunches would be afterwards presentable after being dredged over with flowers of sulphur. Even in the most careful of hands it is difficult to remove it entirely without leaving some trace behind. A safer plan, although perhaps not a surer cure, is to paint the stems of the Vines their whole length with flowers of sulphur mixed to about the consistency of paint, also the hot-water pipes, and sprinkle dry sulphur about the house. At the same time the pipes should be made quite hot, so as to throw off the sulphur fumes, which is fatal to the germs of mildew.

I do not scruple to dust any affected leaves with the sulphur as well, neither should I part a bunch if I found the presence of the mildew before the whole crop was affected. By keeping the temperature higher and the atmosphere drier by the aid of fire heat mildew can be stamped out of any vinery without the trouble of lifting the Vines, providing, of course, the attack is the result of a wrong method of ventilation. This subject crops up at an opportune moment, giving those persons who have but little experience an opportunity to guard against the admission of draughts of cold air direct to the bunches.—OBSERVER.

### PREVENTION BETTER THAN CURE.

HAD Mr. Thomas (page 169) but placed the above heading to his paper on mildew, he would perhaps have been nearer the mark. He admits that in his method of dealing with the plague of mildew on Vines there was nothing new, but at least he does very strongly emphasise the importance of doing the thing drastically, if done at all. At the best, however, Mr. Thomas does but recognise the fact that the sulphur treatment is only a palliative or temporary cure, and does not remove the predisposing cause of the disease, hence the great value of his concluding paragraph. Just as in humanity ninety-nine out of every hundred physical ills come from the stomach, so in plants or trees do the chief ills come from the roots. It is there where those who are in their gardens afflicted with vegetable ills should look primarily for causes.

Plants of all descriptions, if all be well at the roots, seem to have

inherent power to withstand atmospheric difficulties, but the moment there is anything wrong at the roots then they succumb. Even attacks of insect pests are never so harmful or difficult to cope with if all be well at the roots, as when all is wrong vegetable life can then do nothing to help get rid of the parasites. There can be no question but that in relation to roots, their functions, requirements, and foods, there is very much to be learned by the average gardener. Not all plant troubles, of course, are due to deficient root action; some, indeed, are due to too gross root action, when excessive sappiness does but make growth more amenable to diseases.—A. D.



### FRUIT FORCING.

**Vines.**—*Early Houses.*—When the Vines start very slowly and the bunches show a tendency to blindness, and others not advancing freely, they are certain indications of imperfectly formed buds, immature wood, and defective root action. Under such circumstances a slight increase of temperature and a reduced supply of moisture may be beneficial, but the only remedy is border renovation, encouraging growth and exposing it fully to light, with less close pruning. Thinning the berries should be kept well in hand, commencing as soon as those likely to swell freely can be detected, leaving the berries with room to attain their full size without wedging. Supply liquid manure to inside borders after the berries have been thinned, applying it in a tepid state. This, with a liberal supply of atmospheric moisture, especially at closing time, will materially assist the swelling of the Grapes. The winds are often sharp when the days are sunny, and every care should be taken to prevent sudden changes of temperature. Admit air carefully, closing early in the afternoon at 85°, so as to enclose the sun heat, and insure a good heat from that source in the latter part of the day, allowing the temperature to fall to 65° at night. Whilst stoning the Grapes are not materially benefited by a close, moist, and high temperature; but when the stoning is completed they swell rapidly, and should be encouraged by a moist atmosphere, liberal supplies of liquid manure at the roots, ventilating early and closing in the afternoon. Continue this until the Grapes change colour, when they must have air more freely. Keep the laterals properly regulated, but allow some extension, as every leaf encourages root action, and it is necessary to maintain that for a due supply of nourishment, with the foliage fully exposed to light for its assimilation.

*Fruiting Vines in Pots.*—These must sustain no check through dryness at the roots or want of food, supplying liquid manure liberally, surfacing the pots with rich material, and if the roots extend beyond the pots feed them there as well as in the pots.

*Succession Houses.*—The Vines started early in the year are now in flower, and a rather dry atmosphere, with a free circulation of air, and a temperature of 65° to 70° at night and 70° to 75° by day artificially, advancing 10° to 15° from sun heat, are conducive to a good set. Maintain a moderate moisture by damping the house two or three times a day in bright weather. Any shy-setting varieties, such as Muscats, should be kept 5° higher, the flowers being carefully fertilised with pollen taken from the free-setting varieties, as Black Hamburgs. The Vines started at the beginning of last month will require attention for disbudding and securing the growths as they advance, stopping the shoots two joints beyond the bunch where the space is limited, but where there is room allow extension. Remove all superfluous and ill-formed bunches of the free-setting varieties as soon as those that are most promising for the crop can be determined, and those of the shy-setting should be reduced in a similar manner after they are sufficiently advanced for deciding on the best likely to mature.

*Late Houses.*—The midseason varieties intended to afford Grapes in August forward should now be started. Late Hamburgs, however, may be kept cool and not started until next month. Muscats, Alicantes, Lady Downe's, and other late varieties should be encouraged to move now, as they require a long season to grow and perfect their fruit, which should be effected early in September for the Grapes to keep satisfactorily. Inside borders must be brought into a thoroughly moist state by the application of water, but a saturated condition is not advisable, as it hinders rather than assists root formation. Outside borders will not require more than a light mulch of lumpy, partially decayed manure. The atmosphere should be kept moist by damping the Vine rods and every available surface two or three times a day, 50° being a sufficiently high night temperature, 55° by day artificially, and 65° with sun. Young canes should be depressed to insure their pushing the buds evenly to the base.

*Vines Raised from Eyes.*—The "eyes" inserted as before advised will now be well rooted, and should be shifted into 6-inch pots, placing them on shelves of stone or slate over the hot-water pipes in preference to plunging in bottom heat. Syringe tepid water well amongst them and pinch the laterals at the first leaf. The canes should be trained to wires about 1 foot from the glass.

*Cut-back Vines.*—Vines cut back for fruiting in pots next season will now have made a little fresh growth and be fit for shaking out and



repotting. If they have been plunged in bottom heat they should be returned to it for a time, 75° to 80° being sufficient, but otherwise bottom heat is not necessary. Clean pots and efficient drainage should always be provided in Vine culture. Cut-back Vines will be accommodated in 7-inch pots; those that were shaken out some time ago, potted in that size, have filled the pots with roots and made 18 inches or more of cane, should be shifted into 12-inch pots, potting firmly. Good turfy yellow loam, with a 9-inch potful of steamed bonemeal, a similar quantity of soot, and double the amount of wood ashes to 3 bushels of loam, mixed, form a good compost for Vines in pots. If the loam be rather strong add a sixth part of old mortar rubbish. Keep the Vines rather close and moderately moist until they are established. Train the canes near the glass, as they cannot have too much light, it being important that the growth be solidified as it is made, and the laterals should be repressed so as to concentrate the vigour on the principal leaves, which must be kept clean.

**Pines.—Suckers.**—The rooting of these after potting and placing in a close moist pit in bottom heat will be indicated by the growth of the foliage, but it is as well to turn the plants out of the pots so as to ascertain the condition of the soil and the roots. Those issuing from the suckers or plants subjected to similar treatment are very tender and susceptible to injury from the effect of too much bottom heat, hence when they reach the sides of the pots a temperature of 85° is ample, above which there is danger. When the bottom heat is more than that the pots should be raised, placing some loose tan under and around them, so as to allow the superabundant heat to pass away. The plants must not be neglected for water at the roots, but none must be given until it is required, and then a full supply, always tepid, with some stimulant held in solution, as guano, 1 lb. to 20 gallons of water.

**Potting Plants.**—Young stock will now make roots rapidly, therefore have soil in readiness for transferring them to the fruiting pots, it being important that they be grown without a check. Sound fibrous yellow or hazel loam in good sized lumps is the best material for potting, pressing it firmly round the roots of the plants, watering the plants with tepid water, and plunging them in a bottom heat of 90° to 95° until the roots have possession of the fresh soil, when 85° is more suitable.

**Fruiting Plants.**—These and others that are near the flowering state should have a night temperature of 65° to 70°, and 75° by day, with 80° to 90° from sun heat, closing at 85°, well damping all available surfaces in the house at the time. The plants may be lightly sprinkled occasionally, but not when they are in flower. Similar remarks apply to successional plants as regards damping the house and sprinkling the plants overhead, affording them a bottom heat of about 85°.

#### THE FLOWER GARDEN.

**Tuberous Begonias.**—It is a great mistake to leave the seedlings in the pan long after they have formed their first leaves. They can be readily moved with a very small stick having a forked point, this being inserted under the leaves, another pointed stick being used for loosening the soil about the roots. Use a light soil, and place the seedlings about an inch apart in pans. Give a gentle watering, cover with squares of glass, place on a warm stage or shelf in a forcing house, and shade carefully from strong sunshine. After about three days tilt the glass slightly. When nearly touching each other remove them to larger boxes, disposing the plants 3 inches apart each way. They ought still to be kept in gentle heat, and if extra fine plants are required for bedding out transplant to a pit or frame where the benefit of mild bottom heat will be received. On no account place seedling Begonias in small pots, this effectually stunting them.

**Old Begonia Tubers.**—These do not start nearly so well when placed in pots as they do in boxes or beds of moderately rich soil, or a mixture of fresh loam, leaf soil, and old Mushroom bed manure. Last year's bulbs are the best for giving a display of extra fine flowers, and there should be no coddling resorted to. All would start naturally in a pit or frame from which frosts were excluded, and if disposed not less than 6 inches apart each way fine plants will be ready for the beds early in June. Older bulbs may be similarly treated, but if the variety is worth preserving it would pay well for being split into as many pieces as can be had with a shoot attached. Start these in gentle heat, divide when the shoots are about 2 inches long, return the divisions to boxes, and keep in gentle heat till they are rooting strongly.

**Begonia Weltoniensis.**—There are several species of Begonias that succeed fairly well bedded out; but, as a rule, they compare badly with the tuberous-rooted section. The old B. Weltoniensis is a noteworthy exception, the habit, foliage, and flowers all being good, a neat circular bed filled with this variety and edged with blue Lobelia being a welcome change. If any old plants have been wintered under a greenhouse stage remove what long ends there may be attached, start in gentle heat, and take off and place the cuttings in heat. When rooted top them, and soon after either place singly in 2½-inch pots or in boxes. If stopped a second time neat bushy plants will be available by the end of May.

**Two Good Blue Flowers.**—Blue flowers are always scarce, but two old plants which give flowers of the richest blue colour are *Salvia patens* and *Delphinium formosum*. The former has roots much resembling those of Dahlias, and being wintered in a very similar manner can be made to produce cuttings freely now. Placed in boxes of soil and given the benefit of gentle heat shoots will be produced from the base, and these should be detached and rooted in a heated frame. Top the rooted cuttings, pot singly, and otherwise treat similarly to Dahlias. The old roots may be divided, and also planted out. *Delphinium formosum* is very effective, and if raised from seed now the plants will

flower this summer, and much more strongly next year. Sow in a pan of light soil, place in brisk heat, prick out the seedlings in other pans or boxes of good soil, and duly harden off and plant out. If wanted to flower late top the plants once, otherwise there should be no stopping.

**Shrubby Calceolarias.**—If these have been wintered in frames or pits, and either in boxes or in a bed of soil, the plants will now be growing strongly. The tops most probably are long enough for making into cuttings, and will sometimes root fairly well in gentle heat, though spring-struck plants are rarely so serviceable as those rooted in the autumn. Cuttings not being wanted top all the plants, and by the time they have broken afresh it will perhaps be convenient and safe to bed them out temporarily.

**Violas and Pansies.**—It is most unwise to coddle these plants, and it ought soon to be possible to wholly dispense with the lights now over them. Supposing that it is not possible to place them soon where they are to flower, and also that the plants at present are not more than 2 inches apart each way, they must soon be temporarily bedded out 4 inches asunder, where they will develop into sturdy plants ready for the beds early in May. For a later display of Pansies sow seed thinly in pans or boxes any time during March or early in April. It will germinate readily in gentle heat, and if the plants are rather plentiful prick them out early in other boxes of good soil, and from these transfer to the open beds or borders.

**Sweet Peas.**—Most of the newer varieties are best sown under glass. Planting out of pots seems also to favour a strong branching and more continuous habit of flowering than is the case when the seeds are sown where the plants are to grow. Four or five seeds in each 3-inch pot are enough, and these germinate quickly in a brisk heat. If those sown in the open are coming up badly sow more seed in pots, and when the plants have been duly hardened off make good the gaps with these.

**Mignonette.**—Early sowings of Mignonette are often a failure in the open, and the surest way of having an early supply is to sow seed thinly in small pots, placing these in heat. Early reduce the seedlings to three or four in a pot, harden off, and plant out before the soil is crowded with roots.

#### PLANT HOUSES.

**Carnations.**—Plants that have been wintered in cold frames and are well rooted may be transferred into larger pots if they are wanted for flowering under glass. Place these plants singly in 6-inch pots, or two or three in 8 and 9-inch pots. After potting return them to frames, or a cool, light airy house, placing the pots on moisture-holding material. If frost is kept from them they will soon start into growth. Directly aphides make their appearance fumigate with tobacco smoke. These plants do well in good loam, one-seventh of decayed manure, and coarse sand. Cuttings of Miss Jolliffe that have been in a cool house may be taken off and inserted in sandy soil in pots or in a box and covered with a square of glass. If the box containing the cuttings is stood where they can enjoy slight bottom heat they will quickly form roots.

**Primulas.**—To produce plants for early flowering sow seed now in light soil passed through a fine sieve, so that an even surface can be made. The seeds should be barely covered and then watered lightly with a fine-rose can. Cover the pan with a square of glass and a sheet of paper and place in a temperature of 65°. *P. obconica* may also be sown, but do not cover the seed with soil.

**Celosias.**—For an early batch seed may be sown without delay, just covering it. Where Cockscombs, Balsams, Petunias, and other similar plants are appreciated sow seed in small quantities.

**Heliotropes.**—Where standards are appreciated cuttings of soft wood should be inserted in 5-inch pots without delay. The cuttings will root freely under hand-lights in a warm house. Young plants established in 5-inch pots will soon commence flowering freely if placed in a light house where a temperature of 55° can be given them. Plants that have become straggling may be cut back for succession.

**Solanums.**—These should be pruned back and placed in a heated structure until they break into growth. When this takes place reduce the old balls and repot the plants. Seedlings or plants raised by cuttings and established in 2-inch pots may be placed into larger pots. Keep these growing on in an intermediate temperature.

**Prunus sinensis.**—Plants that have flowered may be pruned closely and stood in a Peach house at work until they start into growth, when repot if they need more root room. If the plants are in pots large enough reduce the balls by one-third, and place them again into others of the same size. Cuttings of young wood taken off close to where they issue from the old stem root freely in sandy soil under bellglasses in heat.

**Deutzia gracilis.**—Cuttings may be taken from any plants that have young soft growths upon them if an increase of stock is needed. These cuttings root freely in sandy soil, and may afterwards be planted in boxes a few inches apart. After the young plants are rooted the point of the leading shoot should be removed to induce them to branch. Capital little plants will be produced by the time the weather is sufficiently genial for planting them outside.

#### TRADE CATALOGUES RECEIVED.

John E. Knight, 28, Dudley Street, Wolverhampton.—*Spring Catalogue of Seeds.*

Hogg & Robertson, 22, Mary Street, Dublin.—*Select Farm Seeds.*

Cooper, Taber, & Co., Limited, 90, Southwark Street, London, E.C.—*Agricultural Seeds.*



# THE BEE-KEEPER.

## APIARIAN NOTES.

### VICIOUS BEES.

SOME bee-keepers manage to work amongst and manipulate their bees without protectors, and in a way that does not irritate the bees; while others have always to be veiled when approaching them. The manner, movements, and odour of the bee-keeper have much to do with spiteful bees. We have heard much about the spitefulness of Punic bees, but it is noteworthy to state that during all the many manipulations I had at home with them last summer I never donned a veil, and only occasionally used carbolic acid for the purpose of dispersing the bees. As a precaution at the moors I sometimes used a veil, but when unveiled I found a safe retreat close to the strongest hives. It is, however, safer to be protected, because one stinging bee irritates many, and when so enraged weeks may elapse before they are subdued. The accidental killing of one bee will also at times be the means of infuriating a whole apiary of bees. In spite of this, an American bee-keeper advises killing bees when inclined to sting, and for that purpose he recommends the use of two flat boards, but does not say how that is to be accomplished. Besides, the advice is absurd, for frequently have I fetched vicious bees from apiaries to my own, and before many hours were past they were as mild-tempered as one could wish for.

### PROLIFIC QUEENS.

Much the same as the foregoing advice is that of breeding prolific queens. I defy anyone to lay down rules as to how to breed queens to any reliable standard of prolificness. That is also beyond human power, unless it be in certain crosses or particular breeds of bees. Bees sometimes frustrate the efforts of the queen by eating her eggs as they are laid. Frequently have I changed a queen from a hive that made no progress to another hive, when a new régime was at once begun, and with satisfactory results. It is wise for the bee-keeper either to effect a change or supersede the queen that does not give satisfaction, but he must dismiss from his mind the possibility of raising queens to a certain standard of perfection and usefulness.

### THE WEATHER.

On the 26th ult. we had 5 inches of snow, a mile northwards there being double that depth. On the morning following the thermometer stood at 15°, then on the following day another 5 inches of snow fell, but it was soon dissipated by a westerly wind. The low temperature keeps the bees within doors, not even venturing out to work on the peasemeal. With the exception of the 19th no pollen has as yet been gathered. The high winds have stripped the Willows of many catkins. The forced confinement is to the advantage of both bees and bee-keeper, as the adult population will be spared, and in more strength when milder spring comes.

### FEEDING BEES.

Since January, the 19th of February was the only day bees could be fed with safety; nor until the temperature reaches 60° will I attempt feeding. Although I do not feed bees, as a rule, till May, I shall between the present time and the fruit blossom period give some of my bees several pounds of sugar, in order to prevent early breeders "drawing" their brood.

In the south of England and other places it is sometimes absolutely necessary to have hives earlier than in later districts, in order to insure strong hives and a heavy yield of honey. A few pounds of sugar given now insures the hatching of all eggs laid, uniting two swarms, and distributes the brood combs of a number of the colonies amongst the others about a month before the honey yield. That plan is as satisfactory and remunerative as the old one of working two queens in one hive, obviating the necessity of having cumbersome hives, which militates against profitable bee-keeping in other respects.

### HIVES.

Those who take their bees to the Heather a considerable distance will find it impracticable to move about the "standard" hives, if of sufficient size for two queens. The hives I used for that purpose were made to expand laterally, and are suitable for wintering two queens, expanding in summer, then storifying when moved to the Heather, so that the superficies of the hives were reduced to the lowest possible size.

I exhibited this hive before the Caledonian Apiarian Society along with Mr. Abbott's, when he acted as Judge. At the next Show of the same Society in 1876 I was awarded first prize, and for many years after. I also showed it during the Jubilee year of the Highland and Agriculture Society at Edinburgh, and altogether have secured many prizes.—A LANARKSHIRE BEE KEEPER.



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Address (F. P.).**—The address of Messrs. Bell & Son, as has often appeared in their advertisements, is York Street, Covent Garden, London.

**Cinerarias (L. C. P.).**—It is better in the case of nine Cineraria plants out of ten not to pinch off their leading shoot at this season, but let it extend for flowering.

**Gladioli (F. J.).**—The following are good and inexpensive varieties:—Amalthée, Amitié, Bicolore, Dalila, Flamboyant, Meyerbeer, Opale, Pasteur, Phoenix, Sultana, Shakespeare, Peresita. They will supply flowers from July till October.

**Secretarial Duties (Member).**—Obviously we cannot particularise, but undoubtedly the cardinal duty of a paid Secretary is to carry out the wishes of the Committee whose servant he is. Such an official taking an active part, privately or otherwise, against any member of Committee nominated for a particular position in a society, would render himself obnoxious to other members, and also lay himself open to the charge of disloyalty, but we do not know that any such case has been proved to exist.

**Forced Lilac not Scented (Mrs. M.).**—The spray of Lilac sent is one of the Siberian kinds, but too crushed to distinguish the variety; both the purple and white forms are, however, practically scentless, especially when forced. The flowers are produced from the flower buds formed the previous year, and foliage rarely appears with them under very early forcing. This particular kind is always very shy in this respect. The best Lilac for forcing is Charles X., but this if very early rarely produces foliage, but later it does so freely. The white form Virginalis is good for forcing, and generally produces foliage freely even early in the season.

**Analysis of Celery (W. Spencer).**—The following analysis is given in "Food," by A. H. Church, M.A., Oxon:—

CELERY.							
In 100 parts.				Oz.	In 1 lb.	Gr.	
Water	..	..	..	93.3	..	14	406
Albumen	..	..	..	1.2	..	0	84
Mucilage and starch	..	..	..	1.6	..	0	112
Sugar	..	..	..	2.2	..	0	154
Cellulose	..	..	..	0.9	..	0	63
Mineral matter	..	..	..	0.8	..	0	56

For one part of flesh-formers in Celery there are about three parts of heat-givers, reckoned as starch. According to Wolff in his "Aschen Analysen," Celery takes from the soil the following ingredients represented in per-centages:—Potash, 38.16; soda, 19.33; lime, 13.8; magnesia, 1.41; iron, 5.82; phosphorus, 13.67; sulphur, 3.34; silicon, 2.75; chlorin, 18.51. These are the average results of two analyses.

**Seakale Stems Scabbed (F. M.).**—The root-stems are affected with a fungus, similar to if not identical with that producing brown patches or scabs in Potatoes—namely, Tubercinia scabies, but there is also evidence of the substance of the roots being eaten by the larvæ of some pest, evidently those of the snake millipede (Julus pulchellus). We advise the ground to be trenched 2 feet deep, but if there is only a mere crust of good soil the ground should only be stirred to the depth named. A dressing of kainit, 2 lbs. per rod, should be given the trenched or stirred soil, applying it in the autumn or early in the spring, distributing it evenly and leaving it for the rains to wash in. The "sets" must have all the decayed parts cut away, be dipped in a solution of kainit, 1 oz. to a gallon of water, then stood root downwards to dry, afterwards planting, say in spring, and when that is done, or when the plants show the least signs of growth, apply the following mixture—superphosphate 1½ lb., nitrate of soda 1 lb. (this being in fine powder) mixed, per rod.

**Hyacinths Failing (Subscriber).**—The cause is evidently local, and must be sought for on the spot. The bulbs were good, and the treatment, at least until the plants were removed from the frame, appears to have been correct. The soil sent contains no destructive larvæ, and, as you say, "fine healthy roots formed in it," we conclude it was suitable for its purpose. The crowns started strongly, but eventually the roots perished, and growth consequently ceased. Have the plants always been watered by yourself? is the first question that suggests itself; and the second is, Has any stimulant been dissolved in the water? We have seen the tender roots destroyed in exactly the same way by an overdose of sulphate of ammonia, and we cannot think otherwise than that these Hyacinths have had something applied by someone with, presumably, the best intentions, which has had an unfortunate effect.



**Scale on Pear Trees (S. S.).**—The recipe you name is perfectly safe, as the lime will prevent any deleterious effects likely to follow the use of soft soap at the rate of nearly 1 lb. to the gallon of water. The recipe: "3½ lbs. soft soap, 14 quarts water, with enough quicklime slaked to make a thick paint, and every part of the tree to be dressed with composition," must be carried out without deviation. It is M. Du Breuil's recipe.

**Naming Molluscs (G. McD.).**—Though an authority has been consulted on the specimen you sent with the object of determining the species, the result is not satisfactory through the sample not being in sufficiently good condition for the purpose. As you appear to have several species that you wish to have named, probably the best method of attaining your object would be through the agency of such a journal as "Science Gossip." It is a question for specialists, and not within the province of gardening publications, which only deal with predatory visitants that are in more or less close connection with plants or garden crops. Your specimen does not come within this category.

**Span-roofed Pit (F. J.).**—A three-quarter span would be the best for winter, but as that is the least important period of the year, a span-roofed pit would be better for the position. As you require the pit for growing Cucumbers or Melons in summer the brickwork should not be less than 2 feet 6 inches in height, say 18 inches below and 12 inches above ground, and beyond a 14-inch and a 9-inch course of brickwork as a footing, the wall may be 4½ inches built in cement. This is firmer than 9 inches built in mortar, and that amount of space is gained as standage for plants. The depth named will be sufficient for about 18 inches of fermenting material desirable for bottom heat to the Melon or Cucumber plants, the soil being placed in the centre, say a barrowload in each light.

**Plants for Growing on the Roof of a Building (Librarian).**—We suppose the roof is flat or otherwise suitable for the standage of plants in pots or tubs. The chief point to attend to is securing them in position. Amongst plants that generally succeed well, Zonal Pelargoniums of various sorts perhaps take the first place, then Fuchsias, Petunias, Heliotropes, with Tropæolums of various kinds as trailers. Those are only available for summer. If you want plants that will stand the year round you must have recourse to Saxifrages, Sedums, and Sempervivums, some of which do admirably on housetops, the common Houseleek and London Pride (*Saxifraga umbrosa*) revelling amid the smoke of towns. Chrysanthemums answer well in the autumn, and bulbs in the spring.

**Insects on Pear Wood (J. Hiam).**—The five insects only just visible to the unaided eye as blackish specks are evidently the perfect form of the Pear gall mite (*Phytoptus pyri*, or *Typhlodromus pyri*, *Scheuten*), with six legs. The late Mr. Andrew Murray believed this form to be a Gamasus, but larvæ of the gall mites differ from the adults in being much longer and narrower and only having four legs, some of the adults having twice that number. The whereabouts of this eight-legged mite from the fall of the leaf until the re-appearance of fresh leaves, in which the *Phytoptus* lives and forms spots or galls, has never been satisfactorily ascertained; this, however, is now manifest, and we are obliged by the specimen. The thickening of the Pear shoots is not due to canker caused by the fungus (*Nectria ditissima*). We should like to have one or more young shoots of the current year with leaves, especially those exhibiting reddish or brownish spots, say in August, and if there are raised pustules on the young wood all the better for our purpose. The thickening of Pear tree twigs is due to the same cause as that of Apple trees. The twigs are malformed, but not affected with canker, a very common occurrence in old or full grown orchard Apple and Pear trees, which in bad cases have a tendency to form "witch knots," as in Birch, Hornbeam, and certain other trees. These deformities, however, are caused by fungi, but the gall mites often cause a diseased condition of the growths, similar to a young "witch knot," and not unfrequent in old Apple and Pear trees.

**Peaches Infested with Mildew (R. H. S.).**—The dense greyish patches on the skin of the fruits are the growths of a mildew, *Oidium leuconium*, an early condition of the fungus *Sphaerotheca pannosa*, which is very common on Roses in some localities, and on Peach growth and fruits. It first appears as a minute roundish speck of whitish powder, slightly raised on the skin, and rapidly spreads over the fruit, living on the outer surface of the cells. The patches often cover a considerable portion of the fruits, those badly infested falling, whilst others which do not fall swell irregularly, are sometimes useless. Happily, the mildew succumbs to early treatment with flowers of sulphur dusted on the affected parts; but it is best overcome by sulphur in solution, either in the form of bisulphide of calcium or sulphide of potassium. These can be had at the chemist, but they must be fresh, employing half an ounce to a gallon of water, and syringing on the trees, repeating as necessary. We use the bisulphide of calcium made after the following formula:—"Flowers of sulphur 1 lb., quicklime 1 lb. Slake the lime in a pan, add the sulphur and a gallon of water. Incorporate thoroughly, heat, and boil gently for a quarter of an hour, keeping constantly stirred. Allow it to settle, and when cool pour the supernatant liquid into a stone bottle, and keep it well corked. For use, mix a pint with 12 gallons of water, or a quarter of a pint in 3 gallons." Spray the trees liable to mildew before any signs of the disease appear, and always before the leaves are 2 inches long, continuing the spraying at fortnightly intervals until the foliage is well developed, when there is little to fear from mildew. Evening is the best time to apply the solution. In cases of attack act promptly with two or three forcible sprayings on alternate evenings. Syringing may be practised instead of spraying, but the latter is more effectual and economical. An occasional forcible syringing with clear water should

be given the trees, one good syringing being more effectual than many sprinklings in washing off and destroying the spores, and where syringing is properly attended to there is little or no mildew on Peach trees under glass. Where syringing or spraying is undesirable on account of plants flowers of sulphur should be freely dusted on the trees, especially on the affected parts, and rubbed on the parts of the fruit infested with mildew gently with the finger. That will arrest the spread of the mildew; but it is better to prevent its attacks than to apply remedies, for none will efface the effects. See that there is no deficiency of moisture at the roots of the trees, and afford thorough supplies of water or liquid manure when needed. A renewal, wholly or in part, of the soil of the border early in the autumn to induce a better rooting system might be of great benefit. Read attentively Mr. Owen Thomas's article on page 169 last week.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. —(R. C.).—*Æschynanthus cordifolius*.

COVENT GARDEN MARKET.—MARCH 8TH.  
FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, half sieve .. ..	1	0	to	3	6	Lemons, case .. ..	10	0	to 15 0
" Nova Scotia, per						Oranges, per 100 .. ..	4	0	9 0
barrel .. ..	12	0		17	0	Peaches, per dozen .. ..	0	0	0 0
Cobbs, Kent, per 100 lbs.	0	0		0	0	St. Michael Pines, each	3	0	6 0
Grapes, per lb. .. ..	1	6		3	6				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.			
Beans, Kidney, per lb.	..	0	6	to	1	0	Mustard and Cress, punnet	0	2	to	0	0
Beet, Red, dozen .. ..	..	1	0		0	0	Onions, bunch .. ..	0	3		0	5
Carrots, bunch .. ..	..	0	4		0	0	Parsley, dozen bunches ..	2	0		3	0
Cauliflowers, dozen .. ..	..	2	0		3	0	Parsnips, dozen .. ..	1	0		0	0
Celery, bundle .. ..	..	1	0		1	3	Potatoes, per cwt. .. ..	2	0		5	0
Coleworts, dozen bunches		2	0		4	0	Salsafy, bundle .. ..	1	0		1	6
Cucumbers, dozen .. ..	..	5	0		7	6	Scorzenera, bundle .. ..	1	6		0	0
Endive, dozen .. ..	..	1	3		1	6	Seakale, per basket .. ..	1	3		1	6
Herbs, bunch .. ..	..	0	3		0	0	Shallots, per lb. .. ..	0	3		0	0
Leeks, bunch .. ..	..	0	2		0	0	Spinach, bushel .. ..	3	0		3	6
Lettuce, dozen .. ..	..	0	9		1	0	Tomatoes, per lb. .. ..	0	6		1	0
Mushrooms, punnet .. ..	..	0	9		1	0	Turnips, bunch .. ..	0	3		0	4

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Foliage plants, var., each..	2	0	to	10	0
Aspidistra, per dozen ..	18	0		36	0	Genista, per dozen .. ..	9	0		15	0
Aspidistra, specimen plant	5	0		10	6	Hyacinths, dozen pots ..	8	0		12	0
Azalea, per dozen .. ..	24	0		42	0	Lily of the Valley, dozen					
Cineraria, per dozen .. ..	8	0		12	0	pots .. ..	12	0		18	0
Cupressus, large plants, each	2	0		5	0	Lycopodiums, per dozen ..	3	0		4	0
Cyclamen, dozen pots ..	9	0		18	6	Marguerite Daisy, dozen ..	6	0		12	0
Dracæna terminalis, dozen	18	0		42	0	Myrtles, dozen .. ..	6	0		9	0
" viridis, dozen .. ..	9	0		24	0	Palms, in var., each .. ..	1	0		15	0
Euonymus, var., dozen ..	6	0		18	0	" (specimens) .. ..	21	0		63	0
Evergreens, in var., dozen	6	0		24	0	Primula, single, doz. pots	4	0		6	0
Ferns, in variety, dozen ..	4	0		18	0	Solanums per dozen .. ..	9	0		12	0
Ferns (small) per hundred	6	0		8	6	Tulips, dozen pots .. ..	6	0		9	0
Ficus elastica, each .. ..	1	6		7	6						

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.  
Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.		
Anemones (French), dozen					Mignonette, 12 bunches ..	3	0	to	6	0	
bunches .. ..	2	0	to	6	0	Mimosa, French, per bunch	1	0		1	6
Arum Lilies, 12 blooms ..	1	6		3	0	Narciss, var., French, dozen					
Azalea, dozen sprays..	0	6		1	0	bunches .. ..	3	0		6	0
Bouvardias, bunch ..	0	6		1	0	Orchids, per dozen blooms	3	0		12	6
Camellias, doz. blooms ..	1	0		3	0	Pelargoniums, 12 bunches	8	0		12	0
Carnations, 12 blooms ..	2	0		4	0	Pelargoniums, scarlet, doz.					
Chrysanthemums, dozen						bunches .. ..	5	0		8	0
bunches .. ..	4	0		9	0	Primroses, dozen bunches	1	0		3	0
Daffodils, double, dozen						Primula (double) 12 sprays	0	9		1	0
bunches .. ..	3	0		9	0	Roses (French), per doz. ..	2	0		6	0
Daffodils, single, dozen						" boxes, 100 .. ..	5	0		8	0
bunches .. ..	4	0		12	0	" (indoor), dozen ..	2	0		4	0
Eucharis, dozen .. ..	3	0		6	0	" Red, per doz. blooms..	3	0		9	0
Gardenias, per dozen ..	6	0		12	0	" Tea, white, dozen ..	1	6		3	0
Hyacinth Roman, 12 sprays	0	6		1	0	" Yellow, dozen .. ..	4	0		6	0
Lilac, white, French, per						Snowdrops, dozen bunches	1	0		2	6
bunch .. ..	3	0		5	0	Tuberose, 12 blooms..	1	0		1	6
Lilium longiflorum 12						Tulips, dozen blooms ..	0	6		1	6
blooms .. ..	6	0		9	0	Violets, Parme, French, per					
Lily of the Valley, dozen						bunch .. ..	2	0		3	0
sprays .. ..	0	6		1	6	Violets, Czar, French, per					
Maidenhair Fern, dozen						bunch .. ..	1	6		2	6
bunches .. ..	6	0		9	0	Violets, Victoria, French,					
Marguerites, 12 bunches ..	3	0		6	0	dozen bunches .. ..	1	6		2	0



"FARMING."

SOUND practice and profitable results are both implied by this expressive term; very little difference of opinion is there about the profits, but there certainly are widely different concep-



tions of what constitutes sound practice. To these in a variety of ways expression is given in farm management, aye! and of farm mismanagement too, a mere custom and prejudice very frequently proving an irresistible inducement to the persistent cultivation of crops upon which profit is impossible, to the neglect of, or rather the improper feeding and general care, of live stock. Surely it is high time that there was an end of such folly. What is wanted is more common sense in every detail of farming—better practice on the farm, more business aptitude in the farmer. Entirely did we agree with a recent writer in the *Agricultural Gazette*, who said plainly to farmers, "Do away with the middleman, who is no good to us, and takes what little profit there is."

"Do away with your cake merchant, and use the produce of the farm instead. It seems folly to use cake with all the goodness squeezed out, to give £8 or £9 a ton for the husk, and sell our produce at an average of £5 or £6 per ton."

"Avoid auction marts and butchers' and dealers' 'rings.' They are bound to 'best' us, and why should we give an auctioneer 5s. for selling an animal we are capable of selling ourselves?"

This is clearly the right view of things, but it is only the inception of a change that must be thorough in every way if it is to be successful. Cake, hay, and roots, nutritious as they are when used in judicious mixture, are three of the most costly components of sheep or cattle dietary, not one of them being indispensable. Substitutes? Undoubtedly, and excellent ones, too, have we in silage, Oats, and Oat straw. If it comes to a question of "farming," compare the process of ensilage with that of haymaking. In the one we have simply to mow, cart, stack, and compress; in the other at best there is the mowing, tedding, collecting, carting, and stacking. This can only be done expeditiously in exceptionally favourable weather; with weather at all unsettled the process becomes tedious and costly—frequently exceedingly so; the hay then in the process of "making" loses much of its nutritive property, becoming in a very wet summer so poor in quality as to be very little better than litter. None of this loss in feeding value ever occurs in well managed silage. It is true enough that there is some waste on the outside of a silage stack, but the bulk of it is sound, wholesome, and highly nutritious food.

Another point is bulk of crop. "Farming" means a full crop, and nothing short of it. Do farmers generally obtain a full crop from permanent pasture? Do they get a full early bite, or an abundant aftermath? Is their pasture of the verdant hue in winter which alone betokens land well drained, fertility fully sustained? Assuredly not. Every winter there are tens of thousands of acres of it throughout the length and breadth of the land of that brown hue which proclaims the poverty of the soil, the ignorance and folly of those who own or hire it. It is but the repetition of an oft told tale, to point to sheep folding and chemical manures as a certain remedy for so lamentable a state of things. If we would have full forage crops of every sort we must have sustained fertility, not soil exhaustion. The cause of exhaustion is so certain, the remedy so simple and so sure, that really poor pasture ought to be as much the exception as it assuredly is now the rule. It was positively refreshing to hear from a correspondent of the success which had followed his use of chemical manures, because we still hear frequent expressions of doubt about them, or assertions that they are worthless. "Stimulants are they, and nothing more," said the agent of a large estate to us recently. No clear response did he make to our challenge for proofs; he just had recourse to mere assertion. Plenty of facts had we of the high value of pure nitrogenous and mineral manures in judicious combination, facts which we hope carried conviction with them, as they have so frequently done.

The thorough, intelligent, cultivation of permanent pasture

is a point of husbandry, a branch of "farming," which points to profit in no uncertain manner. Now is the time to begin by a wise outlay of capital upon the purchase of manures, which store the soil about the grass roots with those essential elements of plant foods—nitrogen, potash, and phosphoric acid. To apply them now in the form of nitrate of soda, superphosphate, steamed bone flour, and muriate of potash, so far as means admit, would be a good beginning, and the good work could then be carried on next winter by means of sheep folds on every upland farm where sheep winter well.

#### WORK ON THE HOME FARM.

Early lambs have been folded with the ewes on Swedes which had from the first enough leaves for the lambs to run forward and eat. They now do much more than nibble tops, quite half of many of the roots being eaten before the ewes get to them. This is right, for with sound nutritious trough food health and condition are alike satisfactory. The wrong part of folding is in turning pregnant ewes upon Turnips and giving very little corn or chaff. As a general rule we allow no Turnips of any sort to be used for the ewes till after the lambing. In skilful hands a few Turnips do no harm before the lambing, but owing to the general tendency to use them in excess of what is prudent we allow none to be used. The reason for this may as well be given once more—*i.e.*, that the consumption of large quantities of such cold watery food by pregnant ewes makes so severe a tax upon the system that it weakens instead of nourishing them, causing abortion as well as losses among them so frequently that it has long been thought "good luck" if only an occasional ewe dies. In many a flock lambing does not begin till the middle of March; keep such ewes from Turnips, keep them out of muddy folds. Pasture, silage, and crushed corn will keep them strong and healthy. Beware of cold cutting winds; they are often fatal to young lambs. Give full attention to providing shelter that is thorough and food that is wholesome. Trust nothing to luck or chance, let it be the shepherd's aim to rear every lamb; he may not succeed, but then he may, and whatever be the result the effort to excel makes a man more skilful, enables him to grasp something more of cause and effect, to do better now and in future than he has done in the past.

Most disheartening is it to see the wretched plight of so many store beasts. It is wrong, we say it emphatically, in the grazier's interest, and nothing he can say will make it right. To compel cattle in a state of semi-starvation to clear a pasture of "fog," which in plain English is innutritious grass, mostly brown, is certainly not "farming." Wholesome food and shelter they must have to winter well and come out in fresh condition in spring. Silage, Oat straw, and kibbled Oats, with some Cabbage or Thousand-headed Kale, is the best dietary for store cattle in winter. All of it is grown upon the home farm; there are no cake bills. We cannot afford them, and the hay is reserved for dairy cows and light horses. Pasture herbage is growing so freely that we hope to be able to turn out early this spring.

#### OUR LETTER BOX.

**Chemical Manure for Pasture (W. R. W.).**—By all means repeat the dressing which answered so well in 1890. In the later prescription to which you refer nitrate of potash is simply given as having answered well. We ceased using it because it was so expensive, and also because we had found an efficient substitute in muriate of potash at about one-third the cost of the nitrate. We are glad to know that you derive help from our farm notes.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

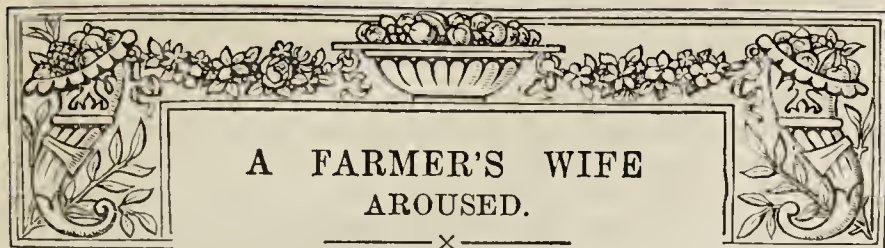
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1893. February and March.	Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		Rain.
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. 26	29.024	41.1	40.0	S.	37.8	47.4	31.8	74.9	27.8	0.178
Monday .. 27	29.386	38.2	35.8	S.W.	38.0	41.1	34.1	52.2	28.4	0.444
Tuesday .. 28	29.486	35.7	34.5	N.	37.9	47.0	32.2	75.9	28.0	0.096
Wednesday 1	29.646	44.2	44.1	S.	37.8	56.9	35.9	85.9	27.4	0.130
Thursday.. 2	29.932	49.3	46.1	W.	39.9	58.0	44.5	87.9	38.6	0.048
Friday .. 3	30.319	43.7	40.8	E.	41.4	49.4	42.1	53.9	40.9	0.049
Saturday .. 4	30.172	49.1	47.9	S.W.	42.0	57.2	43.4	84.4	43.1	—
	29.752	43.0	41.3		39.3	51.0	37.7	73.6	33.5	0.945

#### REMARKS.

- 26th.—Gale, and steady heavy rain from 7 A.M. to 1 P.M.; generally sunny in the afternoon; rain and hail about 5 P.M., bright again after.  
 27th.—Bright early; overcast after 9 A.M., and almost incessant rain from 11 A.M. to 11 P.M., heavy from 11.30 A.M. to 3 P.M.  
 28th.—Rain in the small hours; bright sunshine from sunrise to 3.30 P.M., then slight fog till evening.  
 1st.—Heavy rain from 8.30 A.M. to 10 A.M.; generally sunny after 11.45 A.M., but showery between 2 and 3 P.M. 2nd.—Fine, and frequently sunny throughout.  
 3rd.—Rain about 3 A.M.; overcast day, with a little drizzle in evening.  
 4th.—Rain from midnight to 3 A.M.; overcast, with frequent drizzle in the morning; bright sunshine in afternoon, fine night.  
 Another mild and wet week.—G. J. SYMONS.





THIS week's *Journal of Horticulture* (March 9th) is to hand, and it has "roused" me to say a word or two in a very friendly spirit. I feel sorry the excellent and worthy estate manager, who has told us his mind on page 191, should be so bitter. He mixes up foxhounds, keepers, unjust stewards, and incompetent landlords in rather a funny manner. It does take a great deal of money to hunt the country, but your correspondent seems to forget how and where the money goes. Directly and indirectly the farmer gets hold of some (of course he could do with more), but the day of small things is not to be despised. It is a pity to let good gardens go, but between ourselves are they not sometimes very expensive hobbies, and only maintained for the benefit of outsiders? I am afraid that if landowners had strained every energy to understand their land even that would have gone but a very small way to have kept them clear of present difficulties. I am acquainted, as are other readers of your *Journal*, with large holdings where all that skill backed by money has been done, and even there the end has been the *Gazette*.

Again, Mr. Editor, I quite agree with you as to the ill-adapted men who fill (or, rather, do not fill) the post of agent on many estates; but remember, on a large estate with capitalists and University men as tenants, a man their own equal in point of birth is a necessity. A man of the people, however clever, lacks that *savoir faire* without which there will always be friction between the two parties. I come of a farmer and agent-producing stock, and am convinced that the most successful steward is one born and bred to the profession. He at any rate knows his business, and his first object is to conduct it well.

Now, passing to the last article on the Home Farm, farmers are really not such ignoramus as the writer implies. There are new departures on every hand. Perhaps your correspondent forgets that in farm agreements there may be certain stringent clauses which bind men down to the ways of their ancestors; but apart from this, money, time, and energy are expended with judgment by competent men; nothing is overlooked from the largest to the smallest item. What of the "middleman?" Yes, he is a product of the times, an evil, but at present a necessary one. In old days fairs were held near home twice or at most four times a year; buyer and seller were well known to each other. Now fairs are things of the past, the weekly and fortnightly market taking their place. Is it possible that a farmer with stock to sell three or four times a year could do so well as a man who never misses a market year in year out, a man specially adapted for the business? If Government would take up the railway system of this country, and so lower the rates for small quantities, much farm and garden produce would pass direct from producer to consumer, and so benefit both.

Just a few instances of farm enterprise, not taken from any farming journal, but just selected as being cases near home. One man takes up milk, also Celery and Potato growing, always buying the best in the market, and not hesitating as to price. Another by special attention turns out such sheep as cannot be matched between the four seas. Another raises and puts on to the market one of the best Barleys of this decade. Another clears his rent by his hunters (do not try to emulate him, dear amateur). Another by hackney breeding has rehabilitated the fallen fortunes

of his family. Four wheels will not carry the wagon of another, so he adds a fifth in the shape of a willow garth. Strawberries figure largely in the balance-sheet of another. Acres (600) of bad weak land are bought, washed by the rich waters of the Trent, the produce sent to and manure brought from the Cottonopolis, the carriage of which has been raised since January 1st £700 per annum. Now it is a question as to whether that farm should not go out of cultivation. These new railway rates fairly kill all enterprise, and a change is imperative.

Well, now, *re* feeding stuffs. Animals here do not like and will not have ensilage. Wheat and Barley may be good feeding stuffs, but it is very easy to over-use them, and their manurial value is not great (all land will not grow Oats, or that other valuable food, Beans). No one nowadays buys cake without analysis, and that analysis guarantees a good per-centage of oil. Has your friend had much experience in carting green stuff and cutting up the same to convert it into ensilage? The carting alone costs more than the whole process of hay making, and a very inferior article is produced.

I know all pasture land is not drained; draining costs money, and a great deal too; and what about that land (Holderness) that must be re-drained at least every eight years? Unless the landlord does it, the farmer must have a long purse and a large heart to face such a difficulty. In the parish in which I reside elementary classes for agricultural chemistry are being held; very good, too, but not quite elementary enough. Science without practice leads to starvation. "Twitch out, tillage in," must be learnt first, then the rest may follow.

Passing to Potatoes, there is an advertisement in your front page which interests me. A few days ago a friend gave me twelve "Jeannie Deans" as a great favour; some were steamed, some roasted, all were simply splendid. I think I shall send for a few pecks. I hope I have hurt no one's feelings by this little critique. I do not want to do so, but there are two sides to a question always, even if the other is but that of—A FARMER'S WIFE.

[We like a change of fare, as do our readers, and we insert the able critique with the utmost readiness; and as a lady "born and bred," as well as a real farmer's wife, we concede our correspondent the privilege of presenting one or two of her strong points in italics, and telling points they are, as will be admitted. We happen to know that the farmer himself, whose life our correspondent does so much to make happy, and whose alertness of intellect must often have been helpful to him, is one of the most diligent, competent, and successful of the important class to which he belongs, and we have no hesitation whatever in saying that if all farmers were like him in knowledge of his business, means acquired in it, and prudential habits of life, numbers of estates, and in the aggregate hundreds of thousands of acres of land, would not be in the sad plight they are to-day.]

We do not think this excellent farmer has wasted much money in the hunting field, and we suspect if he indulged in that sport he would make it pay; but he is somewhat of a sportsman all the same, and enjoys himself, as he has full right to do, in the form of recreation which he finds pleasurable and health-giving; but business first, we have not a doubt, has been and is his motto, and that is why he is what he is—a prosperous man, *though* a farmer. Nor is his garden neglected; and if all the great gardens were as well kept as his is they would be more creditable to the proprietors and beneficial to the dependants on the estates. We are glad to know that in this particular farmer's case that the "old and new styles" indicated in the ancient doggerel on page 192 are happily blended, and we are conscious that both he and his accomplished help-meet will take very good care not to be "gazetted," as will our home farmer and estate critic, who can look after themselves and live by their good work on the land. We thank our fair correspondent for her interesting communication.]



## PRACTICAL AND SCIENTIFIC TEACHING.

THE depression that has long existed, and is still very acute, in our chief industry—agriculture—prompts me to offer some suggestions respecting the cultivation of fruit. Absolute experience or agricultural chemistry can alone decide what class of fruit is the best suited for the soil and climate existing in respect of the quantity and quality produced. Some rules, however, seem to be pre-eminent. Keep all fruit grounds free and open on the surface, and free from weeds, and never attempt to grow ground or bush fruit under orchard trees, or ground fruit and bush fruit together. Each class must be separate and distinct.—ENGLISHMAN.

[The above is only a small portion of a long letter, in which the writer at the outset conveys the idea that he desires to develop fruit culture in England, yet goes on to suggest, though he does not say so, that Englishmen may invest with advantage their savings elsewhere than at home in the production of fruit. No doubt it is true that some persons may do so, but as a rule those who fail at home are not the most likely to succeed abroad; and we also suspect that at least some of the tempting invitations held out to small capitalists to invest in fruit culture in various parts of the world are not altogether dissociated from shipping agents and land sellers, and we advise the exercise of extreme caution and searching inquiry by persons before investing their savings in enterprises in distant lands, "boomed" as so many are by capitalists or adventurers.

We do not wish to imply that our correspondent, who is a J.P., is animated by other than the purest motives in what he sends us, and which we do not publish, but we are bound to say he appears to us to be lacking in the "absolute experience" that is requisite for either successful working or sound teaching in fruit culture.

As an alternative to actual experience he specifies "agricultural chemistry" alone as a safe guide to the cultivator. We are not likely to underrate the importance of scientific knowledge, but the acquisition of this, and nothing else, may render a scientist a very *unsafe* guide in practical work of supreme moment to persons who may be induced to invest their savings in it. We are cognisant of deductions being drawn from scientific facts and cultural methods advocated by savants without practice, which if adopted would end in disaster. Skill in the laboratory does not nor cannot suffice for teaching either the cultivation of fruit or anything else, and those students who rely on it solely will find themselves ill equipped for competition with men who have been trained in the utilitarian school of experience.

Our correspondent, whose type-written letter we may presume will go the "rounds of the press" and possibly find insertion in some journal or newspaper, reveals his lack of practical knowledge in the last sentence we print from his letter. "Each class of fruit must be grown separate and distinct." There must then be no Gooseberry or Currant bushes in the vacant spaces between rows of Apples or Plums. It is a fact that the most profitable plantations to be found are arranged on the system that is so emphatically condemned, and this method of occupying the ground is extending and will extend. That the separate system will and does answer under good management goes without saying, but that available space between rows of the larger fruits may not be utilised with the smaller and earlier bearing is a proposition that will somewhat amuse those skilled growers who pursue the method extensively and successfully.

There appears to be something in fruit culture that impels almost all sorts and conditions of men to become teachers of the art. They read books and newspaper articles, and think that in the course of an hour or two they have obtained a grip of the whole question and are forthwith qualified to pose as authorities, and they forthwith lead or mislead the public by their plausible expatiations. A case in point comes to hand. In a scholastic establishment, in which fruit culture is to be taught, a meeting has been held and a lecture given on the life history of the scale insect, and spraying with either Paris green or London purple was recommended by the "professor" as a remedy. It was then decided to spray one of the plantations with Paris green and another with London purple to destroy the insects. This is an instance of the worse than uselessness of scientific teaching alone and apart from the teaching of experience, because time, material, and labour will be wasted, the scale in the meantime increasing. The so-called remedies mentioned are useless against scale and also against the Currant bud mite they are vainly supposed to destroy.

Teaching founded on successful experience alone is vastly more useful than that based on science alone, though we shall perhaps shock the tender susceptibilities of the scientists by the assertion. It is true all the same; but science and practice should, as far as possible, go hand in hand; and it would be better for their

representatives to try and help each other than to indulge in the somewhat vain-glorious habit of a parade of superiority on either side, and thus reveal weakness rather than strength.]

## EARL'S COURT EXHIBITION, 1893.

A REPRESENTATIVE meeting of horticulturists was held recently at the Hotel Windsor, Mr. H. E. Milner being in the chair. Among those present were Messrs. William Paul, T. Francis Rivers, J. Cheal, H. G. Cutbush, John Laing, Harry Turner, and several others. The Chairman, after having thanked those present for their kindness in coming, gave a brief programme for the Exhibition of Gardening and Forestry to be held at Earl's Court this year, which, especially as regards the Forestry Section, at present the most advanced, is being cordially supported by the Woods and Forest Department and the Agents-General for the Colonies, also the leading landed proprietors. Mr. Milner stated that the Exhibition was promoted by private enterprise; at the same time he saw no reason why practical and scientific horticulture and forestry should not be advanced by this year's Exhibition. It was mainly with this object in view that he was induced to take the prominent position he has, and he hoped that those present, and all horticulturists, would give him their support, not only in their own interests, but also for the benefit of the general public. Mr. George Cadell had undertaken the charge of the Forestry Department, and in his capable hands he was sure that that section would be well represented.

With regard to horticulture, it is proposed to hold a series of flower shows fortnightly, commencing on May the 13th until the end of September, under canvas this year, and efforts will be made to make the display, as far as possible, continuous in the intervals between the fortnightly shows.

In the grounds it is proposed to demonstrate the planting of woods for cover and shelter suitable for the four main classes of soil, specimen of timber and ornamental trees, especially those usually classed as pictorial trees.

It is also proposed that this section, which will doubtless prove of great interest to landed proprietors and managers of forests, be further supplemented by a series of representations of the best evergreen, deciduous trees, and shrubs suitable for London and town gardens, and other features likely to be of value from an educational point of view. Very liberal prizes will be offered in the competitive classes at the fortnightly shows, and, with regard to extraneous exhibits, it is proposed that the awards shall take the form of silver cups or silver plate, instead of medals; but a gold medal of higher value will be awarded to exhibits of superlative merit.

The proposals set forth by Mr. Milner were heartily supported by Mr. William Paul, who remarked that in consideration of the able and satisfactory manner in which the International Horticultural Exhibition of last year was conducted by Mr. Milner, he thought that he and his confrères could have complete confidence in his programme for this year, and should exert themselves to carry out the proposals set before them. Mr. Rivers, Mr. Laing, and others were also of the same opinion, and promised their best support. A small committee was then formed to draw up the schedule and carry out the details.

H.M. Commissioner of Woods and Forests, the Trustees of the British Museum, the Director of the Science Division, and the Keeper of Zoology, South Kensington; the Deputy Surveyors of the New Forest and Dean Forest, &c., have already promised their valuable aid and exhibits; while under the kind permission of the Science and Art Department, a collection of woods from Japan, a country which possesses the most remarkable variety of flora in the world, will be shown. Although this will hardly permit a display of what may be called international Gardening and Forestry, the Exhibition bids fair to be more truly international in its character than others which have with less show of reason assumed the title. It will, in any case, unite in friendly rivalry competitors from other countries besides our own little island.

## SILVER MEDAL ESSAY.

### MANURES AND THEIR USES.

By Mr. G. A. BISHOP, *The Gardens, Wightwick Manor, Wolverhampton.*

(Concluded from page 175.)

PASSING from manures for fruit crops we now come to vegetables and plants. Vegetables are grouped in sections—root crops, green crops, and leguminous crops, but the space at disposal does not enable them to be treated fully.



## ROOT CROPS.

Potatoes, Parsnips, Carrots, Jerusalem Artichokes, Turnips, and Onions come under the above heading.

*Potatoes*.—Sandy loam is the best natural soil for Potatoes. Should the land be stiff means should be adopted to improve it. All the old mortar that can be had should be used, and if sand is near labour could not be more profitably employed than in carting it upon the heavy land. Wood ashes and burnt refuse generally are excellent for this important crop.

I will describe an experiment of my own. We had a very large heap of rubbish, which was burnt with plenty of wood; about thirty loads of this were put upon an acre, and about 15 tons of farmyard manure. Half a hundredweight of sulphate of iron was also spread on, and all ploughed in together. The Potatoes were planted after the plough, and the next round was turned upon the planted Potatoes, the whole of the manure falling upon them. The crops of all the varieties—early, medium, and late—were good, Chiswick Favourite exceptionally so. The tubers were of exhibition quality, excepting about one bag per acre. The yield was three to four bags (of 180 lbs.) per rood, and the Potatoes are fetching 1s. 6d. per bag above other people's, because of quality. Grown without any manure, the yield was from one to one and a half bags (of 180 lbs.) per rood, including many diseased tubers. I should add that 3 cwt. of superphosphates and 3 cwt. of kainit were given before the plants were ridged up.

*Parsnips* in deeply prepared and well pulverised ground always do well with a dressing of the chemicals just named, and basic slag as containing lime is excellent for this crop.

*Carrots* are often very difficult to obtain good. I grew about an acre this year, the finest I have seen, and the credit for this I give to kainit. I had the ground ploughed and ridged, then sown with 3 cwt. of kainit per acre. The ridges were split and the seed drilled above the kainit. The crop was heavy and the roots fine without any being injured with wireworm, yet in a patch close by not dressed with kainit, the roots were spoilt by that pest.

*Turnips*.—These will do in any fertile garden soil if plenty of lime is used, top-dressing with nitrate of soda; the nitrogen will improve the Turnips if too much farmyard manure has not been given. Superphosphate will supply the lime; it may be used mixed, say, in the proportion of 3 lbs. of superphosphate to 1 lb. of nitrate of soda, and given at the rate of 8 lbs. per rod.

*Onions*.—Soil made rich with farmyard manure should form the basis for this crop, adding all the wood ashes and burnt soil obtainable. Good drenchings with strong cesspool liquid once or twice during growing period will materially increase the value of the yield.

## GREEN CROPS.

Brussels Sprouts, Cabbage, Cauliflowers, Broccoli, Kales and all classes of the Brassicas, come under this heading. If the soil is treated as mentioned in the trenching for fruit trees, little else is required, but a slight dressing of about 1 to 1½ lb. of nitrate of soda and twice that quantity of kainit per rod will improve the heads and hearts without causing grossness. The per-centage of common salt, potash and soda is high in this family; and additions of kainit and nitrate of soda will supply these essentials. Phosphoric slag is also applied at the rate of 4 lbs. per rod.

## LEGUMINOUS CROPS.

Peas and Beans comprise all the important leguminous plants that concern the gardener. Very little nitrogenous manure need be given to this family, as it is considered that they can appropriate the free nitrogen. I prefer growing them in trenches containing a 6-inch dressing of good cow manure. Kainit and superphosphate, at the rate of 6 lbs. per rod, may be applied with advantage in rainy weather.

## MANURES FOR PLANTS GROWN UNDER GLASS.

This is a most comprehensive subject, and is in itself enough for a whole essay; it will be impossible to do it justice in the small space that I have at my disposal. I will treat upon the soil first, and then divide the plants into groups for the application of manure.

Loam is the most important material for potting. This should be obtained from a pasture several years old, where the fibrous roots are 6 or 8 inches deep. In that case it can be dug and carted into stacks that should be weather-proof; manure from fat stock being spread between the layers of soil, and to every third layer a good dressing say 4 lbs. of kainit to each 4 square yards. The heap should be allowed to stand several months before using, and the soil will then be in first-class condition.

Leaf soil should be stored in heaps, and a little soot or a small quantity of lime may be added to clear it of worms, snails, and insects. Cow or sheep manure rubbed through sieves may be added to the compost before use; but care should be exercised to have the manure heated first to destroy the eggs of insects. Old Mushroom bed refuse affords a good addition for quick-growing plants. Artificial manures ought not to be added to potting compost, as they are much better given when the plants are established.

Cinerarias, Calceolarias, Pelargoniums, Primulas, Fuchsias, and all similar plants, when established, can be watered with solutions made in the following proportions, to be applied at short intervals in the growing period:—Nitrate of soda, 1 lb. to 20 gallons rain water; superphosphate, 2 lbs. to the same quantity of water; sheep manure, 1 peck to 25 gallons, or guano, 1 lb. to 25 gallons of water. Cow manure and soot placed in bags in tubs, 4 gallons to 20 gallons of water. Only one of the above to be used at a time.

As top-dressings, Thomson's, Clay's, Beeson's, or Standen's fertilisers may be used at the rate of a teaspoonful to a 6-inch pot, blood manure at half, and guano at a quarter the above strength.

Crotons, Tabernæmontanas, Gardenias, Dracænas, Ixoras, Bougainvilleas, Stephanotis, Clerodendron, and similar plants should be encouraged by frequent application of liquid and top-dressings of manure. The period of application of manure will begin in March for all the above, and last till August, after which time less dressing and weaker ones must be given; do not drop off altogether or the plants will suffer in winter. I cannot do better than recommend the manures above mentioned, which are those I use myself with excellent results.

## LIQUID MANURE.

The urine and drainings from stables, cow-sheds, and other places should be carefully collected. It is a good plan to have a cistern or tank underground, into which the whole of these drainings can run. These are especially valuable as containing about 80 per cent. of the whole of the nitrogen produced in the excretions.

In making liquid from artificial manure, it must be noted that, as a rule, only soda, potash, and ammonium salts and calcium superphosphates will dissolve, and that a residue will remain which will be valuable, so that the turbid liquid should be well stirred before application, or, if allowed to stand, the residue should be used as a top-dressing. These remarks especially apply to some of the mixtures I have recommended.

## CONCLUDING REMARKS.

Farmyard manure is invaluable on clayey loams, because it contains a little of all the ingredients required by plants. This soil does not require so much manure as do light sandy soils, not only because of what is naturally contained in them, but on account of heavy soils retaining the matter added. Owing to the slow decomposition of farmyard manure nitrogen may not be liberated fast enough to allow of the plant to appropriate the potash and phosphates at its disposal; in that case Peas, Beans, Carrots, and Potatoes will be stringy or hard, and it will be necessary for an application of a nitrogenous manure, such as nitrate of soda or nitrogenous guano; chemical manure containing 100 lbs. of nitrogen will supply this element at once for assimilation by plants, yet that quantity in farmyard manure might not be liberated in six months because of its slow decomposition. Dressing with lime will liberate nitrogen both from farmyard manure and from organic matter in the soil.

Sandy soils are deficient in manurial qualities, and great care should be exercised in selecting manures, so that the least waste is occasioned. Good well-decayed manure from fat cattle is the best possible manure for sandy soils; clay added, and allowed to be exposed to the frost for disintegration, will assist in retaining moisture; and the farmyard manure will supply phosphates, alkalies, and silicates in a soluble form. For the assistance of crops which require potash and phosphates, kainit and superphosphate must be added at the rate of 3 to 4 cwt. of each per acre. Light sandy soils are deficient in nitrogen, owing to its being so quickly washed away into drains and subsoils, therefore it must be supplied by surface dressing with nitrate of soda or sulphate of ammonia during the growing period of the crop, at the rate of ½ to 1 cwt. per acre. One or two dressings may be given to these soils. Phosphates, and if necessary kainit, should be used at the same time with the nitrogenous manures.

In the few remarks I have yet to make may I again call the attention of readers to the composition of the various manures given in the first part of this essay, where they will see their constituents? The following gives the dominating constituents of the various garden crops



as correctly set forth in Messrs. Sutton & Sons' useful work, the "Cultivation of Vegetables and Flowers."

"Vegetables in which *phosphates and potash predominate*:—The ash of these will contain the following constituents in the proportions stated below. The Pea.—Phosphates, 36 per cent.; potash, 40 per cent. The Bean.—Phosphates, 30 per cent.; potash, 44 per cent. The Potato (tubers only).—Phosphates, 19 per cent.; potash, 59 per cent.; soda, 2 per cent.; lime, 2 per cent.; sulphuric acid, 6 per cent. The Parsnip.—Phosphates, 18 per cent.; potash, 36 per cent.; lime, 11 per cent.; salt, 5 per cent. The Carrot.—Phosphates, 12 per cent.; potash, 36 per cent.; soda, 13 per cent.; sulphuric acid, 6 per cent. The Artichokes.—Phosphates, 16 per cent.; potash, 65 per cent. Vegetables in which *sulphur, soda, and salt predominate*.—The Cabbage.—Phosphates, 16 per cent.; potash, 48 per cent.; soda, 4 per cent.; lime, 15 per cent.; sulphuric acid, 8 per cent. The Turnip.—Phosphates, 13 per cent.; potash, 39 per cent.; salt, 10 per cent.; lime, 10 per cent.; sulphuric acid, 14 per cent. The Beet.—Phosphates, 14 per cent.; potash, 49 per cent.; soda, 9 per cent.; salt, 20 per cent.; lime, 6 per cent.; sulphuric acid, 5 per cent."

If the constituents of crops were taken as a basis for manuring in connection with the physical character of the soil and the food ingredients it naturally contains, better results would accrue than from haphazard methods, and the cultivator would have a reward for his intelligence and skill.



#### N.R.S. FIXTURES.

I CONCEIVE that your object in opening your columns for this discussion is not merely that existing and proposed arrangements should be freely criticised, but also that other plans should be suggested, and in their turn thrashed out. Indeed, herein lies the immense value of journalistic discussion. The time flies so rapidly at the committee and business meetings of large societies that there is really no time to bring forward and fairly discuss and decide upon new plans of action, but if the pros and cons have been freely argued in the press, then when a proposition comes before a committee a decision is readily arrived at.

In this spirit I venture to suggest for discussion an arrangement of the N.R.S. Shows which I think would tend to remove the dissatisfaction which many growers undoubtedly feel at present, without involving any hardship to those whom the present fixtures suit. The regulations of the N.R.S. call for the holding of Metropolitan and Provincial Shows, but there is no rule that the former shall always take precedence of the latter in point of date, and my suggestion is that such precedence should be taken alternately by each of these Shows year by year. That is to say, as the Metropolitan Show is fixed for Saturday, July 1st, and the Provincial for Thursday, July 13th this year, let them change order in 1894: the Provincial taking place on the first Saturday in July, and the Metropolitan on the third Saturday (as we are given to understand the Crystal Palace Company insist upon a Saturday). The crux of the divergence of feeling as to dates is that the provincial Show is universally regarded as far inferior in importance to the Metropolitan, and the late growers feel that while the present dates are adhered to all possibility of the superior honour of a win at the Crystal Palace is confined to the earlier men; but if every other year the important Show could be held on the later date this feeling would be removed. I hope that this idea may at least be thought worthy of consideration and discussion by those of your readers who are interested in the matter, and that some plan may be decided upon which will increase the membership of our Society and multiply exhibitors of our national flower.

I have no remark to make upon the letter from Croydon which appears on page 151. I have taken part in various discussions in your columns for some eighteen or twenty years now, but there are two things which I have never done—I have never been guilty of a personal attack upon a correspondent, nor have I ever stooped to reply to one. When such practices become essential to journalistic controversies I shall retire from the field in favour of those whose inclination lies in that direction.—J. B.

[We are requested to state that this letter was written prior to the publication of our issue for March 2nd.]

#### THE PARENTAGE AND NATIONALITIES OF ROSES.

I FIND the parentage or pedigree of Roses extremely fascinating. It is for example most interesting to know that Baroness Rothschild is the gracious mother of Merveille de Lyon; that exquisite Augustine Guinnoiseau is an almost white La France, possessing by inheritance all the attributes of that queenly Rose; that the superb Jeannie Dickson, though an Irish production, has been derived from Marie Finger and Baroness Rothschild: that to Etienne Levet and the Countess of

Rosebery may be attributed (with full permission of their eminent raisers, the Messrs. Cocker of Aberdeen) the origin of the Duke and Duchess of Fife; that La Belle Lyonnaise owes its attributes to the immortal Gloire de Dijon; and that Marguerite Dickson (gold medalist of the National Rose Society, and probably the finest Rose that has come to us from the Emerald Isle) is a beautiful daughter, imperial in her majesty, of Lady Mary Fitzwilliam and Merveille de Lyon.

Nothing unfortunately is known of the parentage of the Duke of Edinburgh, which may perhaps be justly regarded in virtue of its universal popularity as the representative English Rose, unless that it was raised from seed along with some others of almost equal fame by Mr. William Paul of Waltham Cross in 1868. I am curious to know the origin of the Mrs. George Paul, a magnificent Hybrid Bourbon Rose of immense substance, and growing to a height of 4½ feet, which I have obtained from Mr. Prince of Oxford, one of the most successful, so says the Dean of Rochester, of Rose cultivators. I understand that Mrs. Paul has won several first-class certificates, likewise the gold medal of the National Rose Society. It is manifestly a valuable addition to modern English Bourbon Roses, which do not constitute a very formidable class from a numerical point of view.

I should perhaps have mentioned, when speaking of the parentage of highly popular Roses, that Souvenir d'un Ami is the parent of Souvenir de S. A. Prince, of whose remarkable attractiveness as a pure white Tea Rose of exquisite beauty nothing need be said.

The following is what may be termed a list of nationalities:—

England, Duke of Edinburgh.	Scotland, Duchess of Fife.
Ireland, Marguerite Dickson.	Holland, Moss Rose.
France, Maréchal Niel.	Italy, Félicité Perpetué.
Austria, Harrisoni.	China, Blush Rose.
Persia, Persian Yellow.	Japan, Rosa rugosa.

— DAVID R. WILLIAMSON.

#### NEW FRENCH ROSES.

NOTWITHSTANDING the very meagre results during the past few years as far as the French Rose growers are concerned they do not seem to be any way inclined to reduce the lists of novelties (?) which they put before those who I fear have no eyes to see or ears to hear all the sweet and pretty things that are brought before them. As usual we have a list of some sixty or seventy Roses, all of which, if we are to believe the descriptions, are most desirable; but the burnt child dreads the fire, and those who have burnt their fingers in years past are not likely to venture on the operation again; in fact, I very much wonder who are they who do venture the first year to buy in these 25 franc a-piece Roses. I have spoken to many growers, but they all shake their heads, and say "Not for Joe." They are unwilling not merely to pay this sum for these much-vaunted novelties, but also to spend a year on propagating, and then, perhaps, after all to have to burn them. There are no French amateurs to buy them, and yet I do not suppose they would go on raising and distributing them if they did it at a loss; they are very economical and grudge any outlay that is not remunerative, and hence I must suppose that somewhere or other they are disposed of, or at least some of them.

Through the courtesy of Messrs. Ketton of Luxembourg I have received the list of novelties announced for this season—*ie.*, the autumn of 1892 and spring of 1893. In looking over it there are some things very noticeable, the absence of some names we have been accustomed to see in such lists. I do not see either of the Verdiers, one of them at any rate, the most liberal sender out of new varieties. I imagine that Kettons, with their usual care, have not omitted any from their lists, and can, therefore only conclude that they have nothing to send us. Then again those who have been in the habit of sending out a good many are contented with one or two, Guillot, Ducher, Schwartz, for example, while those who keep up the ball are growers who are not the raisers of any exhibition Roses in our N.R.S. lists. Another curious feature in the lists of novelties sent over of late years is the very great proportion of Tea Roses. Thus in the lists for the present year there are forty-nine Teas, eight Hybrid Teas, and sixteen Hybrid Perpetuals. Either the raisers have found out how such Teas have advanced in favour of late years, or they found it hopeless to improve on the H.P.'s we already have, and so devote their energies to the Tea sections; but even here can we flatter ourselves that we shall see flowers to beat the favourites we already have. Ernest Metz may be and is good, Cleopatra pretty, and Madame Hoste useful; but will they lower our estimation of Souvenir d'Elise, Comtesse de Nadaillac, or Catherine Mermet? It may be there is some undiscovered pearl in these new Roses, but the experience of the last few years is not encouraging. But now let us see what they offer.

#### TEAS.

- 1, *Antoine Gauret* (Rebout).—Coppery salmon shaded with rose; very large, double, free flowering, and very sweet.
- 2, *Archduc Joseph* (Nabonnand).—Bright rose, centre lovely copper, the borders of the petals paler; very large, very full, cup-shaped, with pointed bud.
- 3, *Baronne Berge* (Pernet père).—Half of the petals light rose, the centre light yellow, medium size, free flowering, and sweet.
- 4, *Baronne d'Estrange* (Lemarque).—Light rose colour shaded with dark coppery rose, with salmon and yellow; very large, double, globular.
- 5, *Baronne J. B. de Morand* (Widow Schwartz).—Yellowish white, flesh colour, shaded with light rose, yellow guard petals, long foot-stalks.



6, *Beauté Inconstante* (Jos. Pernet, Dueher).—Orange red, reverse earmine, on the reverse side carmine shaded with yellow.

7, *Catherine Fontaine* (Liabaud).—Creamy yellow, large, full, the bud very long, and striped with dark rose; very sweet scented.

8, *Comtesse de Breteuil* (Joseph Pernet, Dueher).—Rosy salmon on the outside, the centre dark peach, almost rose, lined with dark chrome yellow; large, very full, cup-shaped; footstalk firm and upright.

9, *Comtesse Festelics Hamilton* (Nabonnand).—Light carmine red flower, reflexed with copper; outside petals much darker, and coloured on the edges, very large, very full; bud very long, flowers singly, not in bunches.

10, *Comtesse O'Gorman* (Nabonnand).—Flowers china rose, base golden, medium size, half, long buds.

11, *Directeur René Gerard* (Pelletier).—Canary yellow in the centre, back of petals flesh colour, and china rose colour, shaded with magenta on the edges; very double, opening well, very sweet.

12, *Erhprinzessin Marie von Ratibor* (Taske).—What a lovely name! Imagine some of us trying to mouth it out for the judges. Capucine red, at the base yellow; semi-double, generally flowering singly, opening well, and sweet.

13, *Erzherzog Franz Ferdinand* (Souper & Notting).—Outside petals base red, inner petals gold colour, centre earmine lake, with the reverse golden, very full, cup shaped, very sweet; a seedling from Adèle Jongait and Adrienne Christophle.

14, *Fata Morgana* (Drogemeller).—Satiny rose, often deeply shaded with flesh colour; variable, very full, flat.—D., Deal.

(To be continued.)

#### THE ROSE CONTROVERSY.

I DO not wish in any way to re-open the recent controversy, which I am very pleased to find is now definitely, and I trust amicably, closed. Without the following brief explanation the question of "veracity" appears to me to be left in a very unsatisfactory state on both sides. The completeness of the lists of members issued by the N.R.S., for which I am in a great measure responsible, would also seem from the correspondence somewhat doubtful. Mr. Grahame tells your readers that he first joined the National Rose Society in 1878, while Mr. Pemberton stated that he could not find Mr. Grahame's name in any of the lists of members he had by him before 1889. Both of these conflicting statements will, however, on reference to all the lists of members which have been published by the Society, be found to be perfectly accurate, for they show that Mr. Grahame first joined the Society in 1878, but after a few years ceased to subscribe until the Rose year of 1888-9, when he again became a member.—EDWARD MAWLEY, *Hon. Sec. National Rose Society.*

#### CULTURE OF PLUM TREES IN POTS.

THE Plum is one of our hardiest, heaviest cropping, and most useful fruits. The fruit, however, is seldom grown to such perfection as to command full appreciation of its merits. In the first place, little, if any, attention is given to the early thinning of the fruits of outdoor trees, consequently the trees are overburdened, and so weakened by the crop that they only bear about once in three years. The fruit, moreover, is not only small in size and indifferent in quality, but is seriously deteriorated for preserving purposes and drying. In the second place, outdoor Plums are frequently spoiled by inclement weather at the time of the fruit ripening, and so cracked as to be uninviting and not unfrequently unwholesome. The principal objects, therefore, of growing Plum trees in pots are: 1, To insure a crop of fruit in the fullest perfection; 2, Accelerate the fruit so as to secure an earlier supply; 3, Prolong the season.

To attain the desirable results indicated there is no structure better suited for the purpose than the simple orchard house originally introduced by the late Mr. Thomas Rivers. Its adaptability consists in its being so constructed as to admit of thorough ventilation. The boarded sides are not so close as to entirely deprive the trees of air on frosty nights and on cold days when the house is shut, but enough enters by the "chinks" to prevent a stagnant vitiated atmosphere, and this is essential to a good set of fruit. Provision is, of course, made at the sides for abundant ventilation by hinged boards opening the full length of the house, the roof is glazed with large panes of glass, so that the trees get plenty of light, and the inclemency of our fickle climate is defied. In brief, the orchard house is the exact position for growing Plum trees in pots, as it affords sufficient shelter to carry them safely through our uncertain springs; to insure the perfecting of their crops in cold, dull, wet seasons; preserving the fruit in good condition after it is ripe by throwing off rains and keeping it safe from dew and fogs.

With a proper selection of varieties a supply of Plums, for dessert or culinary purposes, may be had from trees grown in pots in an orchard house from the beginning of July to November. The early and late varieties are invariably excellent in quality, but the midseason sorts do not always finish satisfactorily, the fruit ripening prematurely in hot and dry seasons, and has not the crackling flesh and high quality of fruit ripened in the open air. This applies to all the Gage race and other midseason high quality varieties. The late Mr. Thomas Rivers was aware of this, and pointed it out in his first edition of the "Orchard House" in 1850. He advised trees in pots of those races to be removed

to a warm and sheltered situation outdoors for ripening. That is all very well if the weather be favourable, but if wet it is only placing them outdoors to spoil the fruit. I have not a later edition of Mr. Rivers' "Orchard House" than 1858, and I do not know whether the same thing is still advised, but I have had to deal with Plum trees that were planted out under glass, and have found that in a hot droughty summer the Gage race, with Jefferson and similar varieties, did not finish the fruit satisfactorily, being soft in flesh and poor in flavour. I found the defect was due to insufficient watering, feeding, and air moisture, the rule of thumb not being relaxed so as to increase the atmospheric moisture and ventilation essential to the perfecting of these



FIG. 44.—CZAR PLUM TREE IN A POT.

classes of fruit in hot seasons, and to secure its crackling and rich flavour. This liability is more common in the southern than in the northern parts of the kingdom, there the fruit is not half appreciated, nor in cold and wet localities, except when it is produced by trees grown against a sunny wall, or had from those grown under glass.

Some of the culinary Plums attain to a great size when properly thinned, and a quality fitted for the dessert. Czar, shown in the illustration (fig. 44), answers either for dessert or kitchen use, and the dessert varieties make the sweetest pies, puddings, and preserves, but some tastes prefer those more or less tart. The subjoined list caters for both, and the varieties are named in their order of ripening.

*Dessert Varieties.*—Early Favourite, Oullins Golden, De Montfort, Denniston's Superb, Early Transparent Gage, Jefferson, Green Gage, Purple Gage, Transparent Gage, Kirke's, Coe's Golden Drop, Ickworth Impératrice.

*Kitchen Varieties.*—Early Prolific, Czar, Heron, Belgian Purple, Prince Englebert, Washington, Victoria, Pond's Seedling, White Magnum Bonum, Monarch, Archduke, Grand Duke.

In a subsequent issue I will refer to the culture of Plums in pots.—G. ABBEY.





**EVENTS OF THE WEEK.**—The ensuing week will not be such a busy one in horticultural circles as that just past. The first spring Show of the Royal Botanic Society will be held on Wednesday, March 22nd, at Regent's Park, and apart from this but little of horticultural interest, other than the auction sales, will take place in the metropolis.

— **THE WEATHER IN LONDON.**—Last Sunday the thermometer in the shade in the metropolis rose to 64°, or 14° above the March average. This was the highest temperature recorded so early in the season for twenty years, the nearest approach to it being in 1884, when the maximum temperature of 63° was registered on March 15th. In twelve years out of the past twenty the thermometer in London failed to reach so high a point as that on Sunday at any time in March, and in seven of these years it never rose as high as 60°. At the time of going to press it is also fine and mild.

— **WEATHER IN THE NORTH.**—Bright and dull days have alternated during the past week. On two nights the thermometer fell to the freezing point. Strong westerly winds have prevailed, and the weather has been cold, even during the day, the nights being now and then bitterly so.—B. D., *S. Perthshire*.

— **THE ROYAL GARDENERS' ORPHAN FUND.**—The annual dinner in connection with this charity, which was announced to be held on the 22nd inst., is postponed by the request of the Chairman (Baron Ferdinand de Rothschild) to Wednesday, 26th of April.

— **THE FORESTRY EXHIBITION.**—We learn that a project is under consideration for having specimens of the trees and shrubs that are grown in the London parks represented at the forthcoming Exhibition at Earl's Court. The object, we presume, is the laudable one of affording the public an opportunity for noting the most suitable kinds for town gardens—an object to which the park authorities may usefully and appropriately contribute.

— **WALKLEY AMATEUR FLORAL AND HORTICULTURAL SOCIETY.**—At the last meeting of this Society Mr. E. Hill read an essay on "Spring Bulbs," dealing with Hyacinths, Tulips, Narcissi, Lachenalias, and Lily of the Valley. The essayist confined his remarks to indoor cultivation, and gave brief lists of the most suitable varieties. Mr. John Haigh, who presided, also discoursed interestingly on the subject.—E. D. S.

— **IMPORTED APPLES AND PEARS.**—According to the Board of Trade returns for the month ending February 28th, 246,728 bushels of Apples were imported during that period, the value of these being £68,552. In the corresponding month of last year 345,845 bushels of Apples were imported, and these were valued at £103,804. The number of bushels of Pears amounted to 1929, at the value of £1290, compared with 2585 bushels for February, 1892, assessed at £1489.

— **PRIZE FOR BOTANY IN ABERDEEN UNIVERSITY.**—At a recent meeting of the Aberdeen University Court—the Marquis of Huntly, Lord Rector, presiding—a letter from Mr. Hector Allan, Sydney, N.S.W., was discussed, stating that a sum of £75 had been given by the late Rev. Robert Collie, Presbyterian minister, New Town, near Sydney, for a botany prize in the University. The court unanimously agreed to accept the money, and a remit was made to the Senatus to draw up the conditions of the prize. It was explained that this was the first endowment for botany, and the hope was expressed that it might be added to.

— **THE OXFORD BOTANIC GARDENS.**—Referring to these gardens a correspondent writes:—"The state of the various buildings in the Botanic Garden is the subject of an elaborate report from the curators, who have called in Sir Joseph Hooker to advise them. Result—a sum of £3500 is required to put things straight, but the expenditure may be spread over several years. The garden is one of the most beautiful spots in Oxford, but, unfortunately, it is not taken very seriously, and the students of botany are few. The University, in the face of falling rents and a possible diminution of internal revenue, will soon have to consider seriously its attitude towards special studies."

— **THE GRAPE ROOM AT SANDRINGHAM.**—The length of the Grape room at Sandringham is 33 feet instead of 23, as stated in the article in last week's issue.

— **DEATH OF MR. J. T. BURNELL.**—With regret we announce the death of Mr. John Thompson Burnell, so well known as a member of the seed firm of Waite, Burnell, Huggins & Co. of Southwark Street, London, and Paris. Mr. Burnell was in his fifty-ninth year.

— **GARDENING APPOINTMENT.**—Mr. W. Dolling, late head gardener at Whitehill, Newton Abbot, has been appointed head gardener to E. F. Tueby, Esq., Manor House, Ashton, Chudleigh, Devon.

— **FOREIGN POTATOES.**—During the past month the importation of Potatoes from abroad were as follows:—Germany, 5287 cwts; France, 112,608 cwts.; Channel Islands, 435 cwts.; and various countries, 101,915 cwts.

— **DEATH OF MR. C. P. JOHNSON.**—We regret to hear of the death of Charles Pierpoint Johnson, author of "British Wild Flowers" and "Useful Plants," &c., son of the late Mr. Charles Johnson, for many years Professor of Botany at Guy's Hospital. Mr. Johnson died on Monday, March 6th.

— **GUILD OF KEW GARDENERS.**—We are requested to draw attention to the notice of the above Society which appeared in our columns a few weeks ago. All Old Kewites who have not yet sent in their names and address, for publication in the Guild's *Journal*, should do so without delay.

— **EDINBURGH BOTANIC GARDENS.**—We are informed that in a class of upwards of 300 students at the Edinburgh University Botanical Examination, held by Professor Balfour, at the Botanic Garden, Mr. James Wm. Watt, eldest son of Mr. James Watt, Carlisle, obtained second honours for herbarium.

— **TEIGNMOUTH AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT SOCIETY.**—At the fortnightly meeting of the above Society, held on the 7th inst., Mr. G. Foster, gardener to H. Hammond-Spencer, Esq., read a very interesting paper on "The Cultivation of the Tomato." A discussion followed, in which several members took part.

— **ROYAL BOTANIC SOCIETY.**—The first Exhibition of Spring Flowers will be held at the Society's Gardens, Regent's Park, on Wednesday, March 22nd. The customary classes for Azaleas, forced Roses, hardy flowers, Primulas, Cyclamens, Freesias, and bulbous plants are provided, and miscellaneous exhibits are also mentioned in the schedule.

— **MR. BENJAMIN HURST.**—We understand that Mr. B. Hurst, a nurseryman of Burbach Grove, near Hinckley, has been placed upon the Commission of the Peace for the County of Leicester. Mr. Hurst, who has served on the Leicestershire County Council since its establishment in 1888, is the senior partner of the firm of Messrs. B. Hurst and Son, Burbage Nurseries, near Hinckley.

— **BULBOUS FLOWERS.**—I never remember a season when Snowdrops, Crocus, Lent Lilies, Double Daffodils, and the ordinary single Jonquils gave so good a promise for flower as the present. Whether it was the hot, dry weather experienced during the month of last June I am not prepared to say, but suspect it was the reason. Thousands of these bulbs are growing on grass, and in every instance, even under trees, they give promise of a most abundant flower crop.—E. M.

— **TASMANIAN APPLES.**—It is expected that Apples will during the forthcoming season be imported from Tasmania in larger quantities than in any previous year. To meet the demand for cool space in the mail steamers for the conveyance of Apples, the Orient Company have recently made large additions to the refrigerator holds of the Orient Line steamers which will be leaving during the next fruit season. It is stated that the first consignment of Apples will be brought by the twin screw steamship "Ophir," due to reach England about the middle of April.

— **ALLOTMENTS IN LONDON.**—A correspondent in the "City Press" says:—"The very interesting deputation which waited on the Common Council respecting certain unused land adjoining the Cattle Market at Islington, will give the Corporation another opportunity of doing good to the people of the metropolis. This land has never been utilised for market purposes, and certain working men in the neighbourhood, which is thickly populated by people living in small houses, often with scarcely a backyard, are desirous to obtain allotment gardens on this idle land."



— **WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.**—A meeting of the above Society was held on Thursday last at the Mechanics' Institute, Mr. R. Todd presiding. A paper on "Ferns" was read by Mr. F. Ker, who gave a good selection of exotic Ferns with hints as to their respective treatment. The paper was rendered doubly interesting by a large number of dried specimens which Mr. Ker had on view. The usual vote of thanks terminated the proceedings.—R. P. R.

— **A GOOD NARCISSUS.**—When paying a visit to the well kept gardens at Hasely Manor a short time since, Mr. Clements pointed with justifiable pride to some well-grown Narcissi. I noticed many fine spikes, but one in particular stood out as a veritable giant among them all. The flower stem was of extraordinary thickness, but still more remarkable were the individual flowers which composed the spike; counting these, fully expanded and opening, there were twenty-two. It would be interesting to know if other cultivators have grown or met with a similar instance of prolific flowering in any of the Polyanthus Narcissi. The variety in question was Prince of Wales.

— **DIELYTRA SPECTABILIS.**—In the same garden I noticed some especially good specimens of this grand plant. The fine arching flower spikes were of great length, and the growth having developed regularly on all sides rendered the plants especially suitable for arranging singly in vases, placed in a somewhat elevated position, and I can imagine nothing more useful or beautiful for the purpose.—D.

— **BEDDINGTON, CARSHALTON, AND WALLINGTON HORTICULTURAL SOCIETY.**—The annual Exhibition of this enterprising Society will be held on August 7th. Numerous classes are provided in the schedule, and liberal prizes are offered for various exhibits. A novel feature is the class for the best dinner to be produced at a cost not exceeding 2s. The dinner must consist of meat, and at least two distinct kinds of vegetables, and be sufficient for a man, his wife, and three children. The value of each article must be clearly stated. The prizes of, first, £2; second, £1 10s.; third, £1; fourth, 10s., are presented by Mr. A. Smee, who also offer awards for home-made jams. The classes are open to wives and daughters of all subscribers and members.

— **AUSTRIAN versus CORSICAN PINES.**—Like Mr. Parker (page 192) I have found the value of "Austrians" for shelter from wind. I have also found that Corsican Pines are better wind-resisting trees than many persons think. We have a number of both growing side by side in a rather exposed situation, and they seem to withstand the force of the south-westerly gales equally well. Although the Corsican is credited with being of much quicker growth than the Austrian Pine I do not find it so. Several hundreds of each were planted side by side ten years since, and at the present time both are of the same height—12 feet. The Austrians promise quite as well as do the Corsicans in the matter of growing into timber. In both cases the growth is clean and straight, and indeed all that is desirable.—E. MOLYNEUX.

— **THE GORDON BOYS' HOME.**—I should very much like to support the appeal made by Colonel Walker, the commandant of this home for boys at Bagsbot, for plants that may be spared for the lads who have gardens. The boys are gathered from all parts of the kingdom, and are in no sense associated with crime or improper conduct. Rather good conduct allied to poverty is the chief recommendation for admission into the Home. Several of the elder boys under the charge of the bailiff and gardener (Mr. Hale) attended my horticultural lectures at Chobham early in the winter, walking a couple of miles for the purpose regularly. They were very patient, attentive, and interested listeners, and I am sure present first-rate constituents for the making of well trained garden lads, should any readers need such assistance.—ALEX. DEAN.

— **THE NATIONAL DAHLIA SOCIETY.**—The annual general meeting of this Society was held recently at the Hotel Windsor, Mr. E. Mawley, presiding. According to the report, the season of 1892 was not one of the best for Dahlias, though, notwithstanding this, the annual Exhibition was a fine one. The Committee deplore the loss of the late Mr. J. Downie, of Edinburgh. The financial statement showed that the subscriptions amounted to £56 9s., there being also £50 from the Crystal Palace Company and other items. Against this £122 15s. had been distributed in prizes, a small balance remaining in hand. The Rev. Charles Fellowes was re-elected President; Mr. T. W. Girdleston, Secretary; and Mr. E. Mawley, Treasurer. Mr. W. Frost and Mr. R. Dean were added to the Committee, the former in the place of the late Mr. G. W. Phippen. The other members of the Committee were re-elected.

— **THE ROYAL WESTERN HORTICULTURAL SOCIETY.**—This Society held its annual meeting last week at the Plymouth Guildhall, under the presidency of the Mayor, Mr. W. Law. The report stated that the subscribers were to be congratulated on the good work that had been done. There was expended in prizes £118 18s., and there remained a balance to the credit of the Society of £128 9s. 9d. Whilst regretting the resignation of Mr. E. J. Winter Wood as Hon. Secretary, the Committee were glad to report that Mr. John Walling had accepted the office.

— **PRESENTATION TO MR. GEORGE DICKSON, J.P.**—On the 4th inst. the Committee of the Newtownards Horticultural Society presented Mr. G. Dickson, J.P., the head of the firm of Messrs. A. Dickson & Sons, with a testimonial in recognition of the valuable services he has rendered the Society during the past thirty-seven years. The presentation consisted of a silver salver, with silver tea and coffee service, weighing over 300 ozs., and accompanying the gift was a tastefully designed volume, containing the address and signatures of the officers and members of the Committee.

— **KIRKSTALL ABBEY GROUNDS.**—At a recent meeting of the Corporate Property Committee of the Leeds Corporation, plans for the laying out of the grounds adjoining Kirkstall Abbey were considered. Thirty-seven sets of plans were originally submitted. These were reduced to half a dozen by a sub-Committee appointed for the purpose. The Committee eventually resolved to pay the first premium of £20 to Messrs. J. Cheal & Sons, nurserymen and landscape gardeners of Crawley, Sussex. The design submitted by this firm has numerous fine features, and when carried out will render the Abbey and its grounds an attractive resort. The carrying out of this design will involve an estimated expenditure of £3000. The second premium of £10 was awarded to Mr. T. H. Mawson of Windermere.

— **WAKEFIELD PAXTON SOCIETY.**—The programme of meetings for the first quarter, session 1893, is as follows:—March 11th, "Bees and Bee-keeping," Mr. J. Eastwood; 18th, "Legends Respecting Trees and Plants," Mr. A. Batty, Rothwell; 25th, "Plant Adaptation for Fertilisation" (illustrated with lantern diagrams), Mr. J. W. Macpherson, B.A.; April 1st, "Depression in Agriculture," Mr. T. Pitts; 8th, "The Camellia," Mr. J. G. Brown; 15th, "Body and Mind, their Relations," Mr. G. W. Fallas; 22nd, "Deep Cultivation (Importance of)," Mr. W. Hudson; 29th, "Soils and Manures," Mr. H. Crowther; May 6th, "Nature Notes," Mr. G. Bott; 13th, "Garden Pests," Mr. J. Wood, Kirkstall; 20th, "The Rhododendron," Mr. G. Hudson; 27th, "Place Names," Mr. James Reyner. The meetings are held at the Society's room, Westgate, Wakefield, each Saturday evening, commencing at eight o'clock prompt.

#### JOTTINGS FROM MEMORY—EARLY LONDON FLOWERS.

SOME time during December in last year a correspondent wrote from South Devon in the pages of "our Journal" relating on the extreme mildness of the season there, at the same time naming several varieties of summer flowers then in bloom. What thoughts for reflection that note conveyed to me!

Although the end of 1892 was generally mild throughout England until Christmas day, still there were times and districts where unexpected onslaughts had been made on vegetation even in "favoured" localities. Mr. T. J. R. Chalice of Plympton, South Devon, told me that he had experienced more extreme cases of destruction to vegetation by frost in the spring and summer of 1892 than in any year during the twenty-seven years he had been established there as a nurseryman and florist. The warm bright weather of early April had caused most of the nursery stock of shrubs and Coniferae to commence growth, when on the night of Good Friday they were visited with such a frost that crippled everything, and all new wood was checked for the remainder of the year. Both in June and July he said they had had other frosts, and at 5 A.M., September 17th (I had been up all night watching by the bedside of a dying parent) I saw Kidney Beans with icicles hanging from the points of the foliage, and the leaves of Savors completely covered with thick hoar frost, which caused them to hang down, as is customary on a severe winter's day, and this was about thirty miles south-west of your correspondent, and within five miles of Plymouth. All Dahlias and similar tender plants were quite blackened and destroyed, and this I found was by no means an isolated case, but extended over a very large area of that beautiful county. At the same time the plants under my charge in the neighbourhood of London, 240 miles distant, had not suffered in the least, and Dahlias (we grow two thousand) and other tender summer occupants of the garden, remained gay until October had far advanced. To me this was a most singular and exceptional climatical contrast.

While crossing from Cowes to Southampton by an early morning boat on November 9th last, there were three passengers on board with



baskets or bouquets of outdoor-grown garden flowers, a large proportion of them being Cactus Dahlias. On inquiry (for I found them very agreeable companions) I gleaned, as I had thought, that these displays could not be general throughout the island, but had escaped injury from frost by being planted in sheltered spots; this would, I think, equally apply to your correspondent's case in fair and sunny Devon. I can well remember over thirty years since how at Teignmouth the *Clianthus puniceus* flowered and flourished with only the protection of a verandah, and that pretty Heath-like shrub, *Fabiana imbricata*, grew and bloomed abundantly year after year without any protection whatever, while Myrtles and Fuchsias made huge bushes, and the Lemon-scented Verbena, *Aloysia citriodora*, covered a large space of the side of a building.

It would be of interest to know how vegetation has fared there this winter since the time your correspondent penned his note. In London since then we have had for a time some very severe weather. For quite a month the ground was sealed against all garden operations, and with me the thermometer registered twice in the first few days of the new year 25° of frost, the ice on the lake being more than 7 inches in thickness, and skating was general for thirteen days. Notwithstanding, I am pleased to be able to record that comparatively little damage was done to trees and shrubs, although some of them still carry a brown and scalded appearance, amongst which may be named Golden Hollies, *Elæagnus*, *Phillyreas*, *Euonymus*, *Cotoneaster microphylla*, and several of the *Berberis*; but all these will recover their former beauty as new growths are made by warmer weather. The *Escallonia*s I am afraid, are past recovery, but these should never be relied upon in this latitude, and can by no means be recommended for cultivation in or near London.

But how wonderful Nature is! Scarcely had the frost gone from the ground when that harbinger of spring, the Winter Aconite, *Eranthis hyemalis*, came peeping up its golden miniature Tulip-like heads where it has remained proudly in bloom for fully a month now, to cheer by its brightness, and long after the flowers are faded will its fringed collar of elegant foliage remain with us fresh and green. Bulbs of this plant planted during the autumn are not so early in blooming as those that have not been disturbed but left to nature to ripen and die down in the ground where they are required to bloom another year. They can be bought very cheaply, so that I wonder they are not more generally grown. Closely following the *Eranthis*, the Snowdrops were found pushing their way with their little white flowers compressed between the foliage. They are well known and a serviceable favourite with all. Then we have the Hepaticas, a most pleasing and attractive family, especially on days when we are favoured with a glimpse of sunshine, the warmth of which causes the flowers to fully expand and command admiration. *H. angulosa* is a much larger flowering variety than the common form, but all are worthy of extensive cultivation. Pressing hard on the above, we have various varieties of *Crocus* and *Scillas*, all adding their modest share of beauty to other attractions.

I often have to deplore the destruction of the *Crocus* by sparrows, but it is the old old tale. *Saxifraga Burseriana*, of which I possess only two small plants, exhibited its scarlet buds while the frost was yet with us, now its white flowers are fully expanded. *S. oppositifolia* is in bloom, and also *S. crassifolia*, with its dense masses of pale rose flowers, half hidden beneath its large and leathery foliage, as if seeking protection from the cold March winds. *Daphne mezereum*, growing on the rockeries and elsewhere, are now in full flower, enhancing its leafless and otherwise rigid bare stems with numbers of brilliant red, white, and pink blossoms, and coming into bloom so early in each year is both showy and welcome. *Rhododendron præcox* is a very pleasing plant for the rockery, both in habit of growth and brilliancy of flower, but too frequently the blossoms expand in ungenial weather and get punished; but if only cultivated for its habit, its foliage, and its profuse bursting buds (in which undeveloped state it is sweetly pretty) it is worthy of a place, and of all that can be said in its favour. *Andromeda floribunda* is also stretching out its Lily of the Valley like blossoms, while *Erica carnea* is literally covered with its pale rosy flowers; this should be grown very plentifully, either as isolated tufts or as an edging around *Rhododendron* beds. *Jasminum nudiflorum* is expanding its bright yellow flowers, as gay and as striking as it can be found in December, mocking the extreme frost, which held it in check and prevented it from spanning the old and the new years, as it often does, contrasting then in beauty with the scarlet berries of the Sweet Briar and *Cotoneaster Simmondsi*, the berries of both of which have long since been taken for food by our feathered songsters. *Cydonia japonica* on a wall has already opened some flowers, while this and other varieties grown in beds or borders are boldly forming their flower buds to furnish bloom ere long. The male plants of *Aucuba* are also in flower. *Pulmonaria officinalis* and *Arabis alba* are just commencing to bloom, as also are *Polyanthus* and the common Primrose; the last two are well suited for spring town gardening, and as we devote a large space to the cultivation of the Primrose, its magnificent if though simple display recalls memories back of bygone days, when I used to travel some lone country lane in fair Devon.

Nature, again, equally asserts her powerful influence over the lofty forest and other trees as well as the most deciduous shrubs, showing how sensitive they all invariably are to light and warmth. The catkins of several varieties of Willows calls for a burst of admiration; the earliest form with me is a variety known here as the Bitter Willow, which, I think, is *Salix monandria*. Then we have next the Weeping Kilmarnock and *Salix rigida pendula*, hanging thickly studded with their light, downy catkins that, when viewed from a distance may be pardonably

mistaken for flower buds. A variety of pendulous Poplar has very curly and fluffy long catkins, while the same dropping from the Hazel and the Birch are all very interesting.

Higher aloft it will be found that the lofty Elms are thickly studded with small, singular, if somewhat unattractive, flowers.

The uppermost buds of *Rosa rugosa* and several other sorts are almost in leaf, while all the varieties of *Pyrus*, Lilacs, Ribes, and several varieties of the deciduous *Spiræas* are fast pushing their latent buds, affording all interested a host of wonderful pleasures for study, and, verily, in the words of the poet, we may all soon exclaim—

“Spring, sweet spring, is the year's pleasant king.”

—J. W. MOORMAN, *Dulwich Park*.

## USEFUL GARDEN FLOWERS.

WHILE such popular plants as Stocks, Asters, Phlox, Marigolds, and others generally grown, are indispensable in gardens, there are others which ought not to be overlooked. *Mathiola bicornis*, or the Night-scented Stock, as it is often more commonly called, is a charming plant, deserving of a place in every garden, not so much on account of the beauty of its flowers, which are of a pale lilac colour, and partially closed in the daytime, but for the deliciously fragrant perfume they emit in the evening, especially after a shower. The plant succeeds best when the seed is sown in patches or clumps on the borders where required for flowering. It is surprising that this fragrant annual has not become a general favourite.

Then we have the *Nemophilas*, remarkably free flowering annuals. There are several varieties, but I think *N. insignis* is one of the best and most useful. It is of a neat, compact habit, with sky blue flowers with a white centre. The *Nemophilas* are of very easy cultivation, and well adapted for the rockery or as edgings to beds and borders, or any position fancy may suggest. It is the best plan to sow the seed where the plants are intended to flower, taking care to thin them out as soon as they are large enough. This is one of the most charming of common garden flowers.

Purple and white Rockets (*Hesperis matronalis alba plena* and *Hesperis purpurea plena*) are, although well known, seldom met with. This is very singular considering that they are as beautiful and sweetly scented as the much-prized Stock. They last in bloom a great length of time, and the flowers are useful for cutting. I should advise all lovers of hardy flowers to obtain a few plants as soon as possible. Propagation is easily effected by division of the roots or by cuttings.

For mixed borders the *Achilleas* deserve a prominent position, and their pure white double flowers are valuable for cutting purposes. *Aubrietia Leichtlini* is a charming little plant for the rock garden, and is sure to become a favourite wherever known. *Dictamnus fraxinella* and *Dielytra spectabilis* cannot be too highly recommended. *Doronicum plantagineum* is, I think, one of the most effective spring flowering plants in cultivation, and few plants can excel the splendid display caused by this when its countless numbers of large yellow flowers are fully expanded, each bloom being from 3 to 4 inches in diameter. *Rudbeckia Newmanii* is most effective in the autumn. It will thrive in almost any soil or situation, and is of very free growth, and produces abundance of golden yellow flowers with black centres, useful for cutting, and lasts a long time in water. I must not close this short note without mentioning *Anemone japonica*, *Zauschneria californica*, and *Centaurea montana*, for the various parts of the flower garden, besides being indispensable where a continuous supply of cut flowers are in demand.

—GEO. PARRANT, *Ashby Lodge Gardens, near Rugby*.



### CULTURE OF PERISTERIA ELATA.

ALTHOUGH introduced from Panama in 1826, this Orchid when in flower and well grown even now commands attention and admiration. As its cultivation is carried out very successfully with us, my experience might be of interest to readers of the Journal. It is useless to expect weakly pseudo-bulbs to flower. What is wanted are firm and large pseudo-bulbs, and success in flowering, if the cultural details are closely followed, is assured.

Plants in small pots will now be starting into growth, and if they are taken in hand at once, will by the end of the season have made rapid progress, and developed some good bulbs. Have a compost prepared consisting of two parts fibrous loam, with all loose soil shaken out, one part good peat, the remaining part being made up of soft red sandstone, broken up to about the size of walnuts, coarse silver sand, and some chopped sphagnum moss. Mix the whole thoroughly, and have it in a fairly moist condition. Then prepare some clean pots, and well drain them to a depth of



from 2 to 3 inches. On the drainage place the rougher portions of the compost, and fill up until there is sufficient room left for the base of the bulbs to be level with the rim of the pot. Put a small stake to each, so as to keep them steady until sufficiently advanced to take care of themselves. Remove to a temperature of from 60° to 70°, and syringe frequently about the pots, taking care not to sour the soil before the roots have made some progress.

When the thick fleshy roots can be discerned making their way into the new compost top-dress with a few good pieces of lumpy peat and loam, placing small lumps of sphagnum moss where available. When the top-dressing is completed the base of the bulbs should just be on a level with it. As the season advances copious supplies of water may be given, and to plump the bulbs up thoroughly apply weak liquid manure twice a week. When the winter approaches, and the bulbs seem to have stopped growing, water may be withheld altogether, for it is only by a thorough season of rest that this Orchid can be induced to flower, and it is just at this stage that so many failures occur through not withholding water from them.

In early spring the flower spikes may be seen pushing from the base of the stronger pseudo-

every year, in efficiently drained pots, using about equal parts good fibry peat and sphagnum moss with a few small potsherds and a little fine charcoal being added, making the whole quite firm and keeping the plants well up in the pots.

The plants require plenty of heat and atmospheric moisture, and being kept uniformly moist at the roots during the growing period and until the individual growths have developed their last pair of leaves. They should then be suspended from the rafters in a dry airy house to mature their growth, water being gradually withheld from the roots. The temperature of a late vinery would suit the requirements of the plants admirably, first making sure that they are perfectly free from mealy bug before putting them in a vinery. The plants may be introduced into a warm house early in January for flowering in March.—H. W. W.

#### CYPRIPEDIUM × PENELAUS.

ONE of the finest hybrid *Cypripediums* raised during the past year or two was that exhibited by Messrs. James Veitch & Sons at the meeting of the R.H.S. on January 17th under the name of *C. Penelaus*. It was the result of a cross between the distinct variety of *C. caudatum*

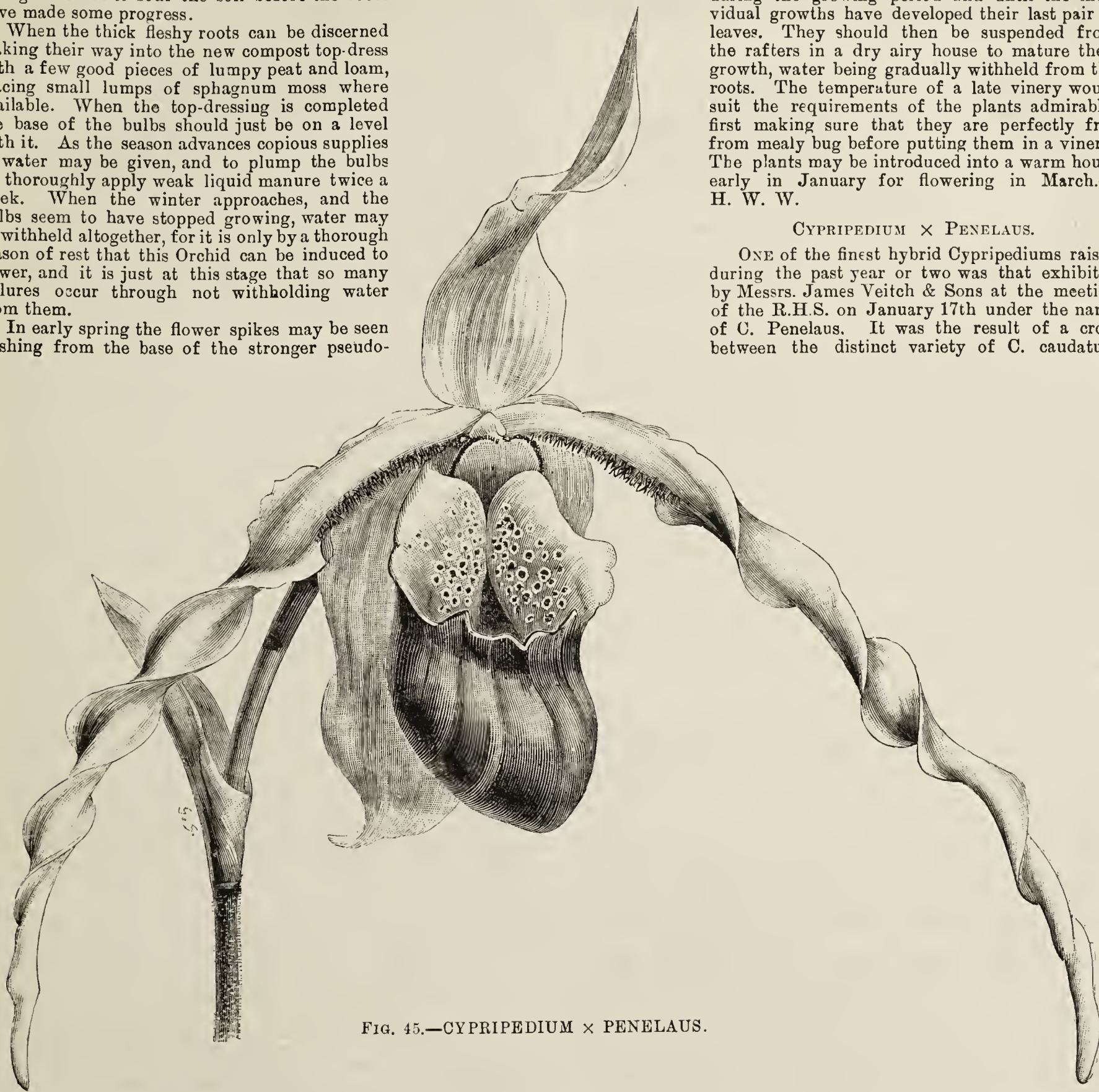


FIG. 45.—CYPRIPEDIUM × PENELAUS.

bulbs, and until these get far enough advanced to discern them from the growth there should be absolutely no more water given than what will prevent the plants shrivelling. By following this system of culture we are able to flower this delightful Orchid every season. White scale often attacks the foliage. Sponging with a little softsoap and water will soon remove it, but care should be used, so as not to damage the leaves.—R. P. R.

#### DENDROBIUM DEVONIANUM.

PLANTS of this pretty deciduous *Dendrobium* growing in 4½-inch and 6-inch pots, and suspended from the roof, are very effective. One shoot of a plant I have has forty expanded flowers extending over a length of 2 feet. The flowers are very pretty, the sepals and petals being creamy white streaked with rosy purple, and the lip being white, beautifully fringed and edged with rosy purple, and having two orange spots, one on each side, at the base. The plants should be potted when finished flowering, not necessarily

named *Lindeni*, with its long, peculiar lip, and the well-known *C. calurum*, the former being the pollen and the latter the seed parent. Their union was a happy idea on the part of the hybridiser, for the result could hardly fail to be distinct and interesting, if not beautiful. *C. Penelaus* is all three. One of the most remarkable features of a noteworthy flower is the lip, which does not follow the peculiar structure of *C. caudatum* *Lindeni*, but is large, full and massive, in colour a bright greyish rose. The dorsal sepal is long, narrow, and pointed, greenish-yellow in hue. The petals are extremely beautiful; they are long, drooping and twisted, soft rosy pink in colour, and impart a most graceful appearance to the flower. It will be gathered that the colouring does not partake of the "harmony in green and brown" type, but rather classes it with the select number of richer coloured forms, of which *C. Sedeni candidulum* is one of the most familiar examples. The new hybrid has, however, a much finer flower than that favourite *Cypripede* can boast. Fig. 45 represents it.



## DENDROBIUMS IN SMALL POTS.

I ENCLOSE a photograph of a *Dendrobium nobile* that is now in bloom in the stove at Cragg Royal, Rawdon, the residence of A. Jacobs, Esq. (gardener, Mr. T. Newbould). It is grown in a 6-inch pot, and has over 200 blooms on it. In the same house is another plant of *D. nobile*, with about the same number of blooms on it, but is grown in a 7-inch pot. I should like to know if there is any account of equally fine specimens grown and bloomed in such small pots.—W. OLIVER.

## ROYAL HORTICULTURAL SOCIETY.

MARCH 14TH.

THE Drill Hall on the above occasion presented a bright appearance, the large building being well filled with spring-flowering plants. Orchids were well represented. Fruit was not extensively shown.

**FRUIT COMMITTEE.**—Present: Philip Crowley, Esq. (in the chair), Rev. W. Wilks, and Messrs. T. F. Rivers, G. Bunyard, J. Chcal, Harrison Weir, T. J. Saltmarsh, G. Norman, J. Smith, J. Hudson, H. Balderson, G. Wythes, E. Burrell, G. Sage, W. Bates, G. Goldsmith, G. T. Miles, J. A. Laing, G. W. Cummins, C. Ross, and J. Wright.

Mr. Charles Ross, Welford Park, Newbury, sent a seedling Apple, medium sized, flattish, greenish yellow, heavily netted with russet, but was not considered equal to existing dessert varieties, and no award was made.

Mr. Owen Thomas sent from the Royal Gardens, Windsor, good bunches of Black Hamburg Grapes, grown in a house which was closed on November 1st and heat applied November 15th. The berries were good, but not quite ripe. These were the first new Grapes brought before the Committee this year, and an unanimous vote of thanks was accorded. Mr. Wm. Smythe, The Gardens, Basing Park, sent bunches of Mrs. Pince Grape (shrivelled), also of Alicante and Lady Downe's, fresh and good, the Alicantes especially (cultural commendation).

The Cape Fruit Syndicate sent through Messrs. Draper & Co., Covent Garden, fine bunches of white and smaller bunches of coloured Grapes, but they did not arrive in tempting condition. In quality they were better than the Almerian Grapes, and might possess commercial value in England if they arrived in a more presentable state. Williams' Bon Chrétien Pears from the Cape were so advanced in decay as to be practically worthless. Three Cape Melons were also sent, very large, oval, well netted fruits. One of them, a green-flesh, was of good marketable quality, the others over-ripe.

Mr. J. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, sent a box of La Grosse Sucrée Strawberries, rather small, but ripe, and a vote of thanks was awarded. Mr. Leech sent ripe fruits of Ladybird Tomato, small and corrugated, very unlike the condition of the variety in summer and autumn.

Mr. E. Beckett, The Gardens, Aldenham House, Elstree, sent samples of what he terms the "New Forcing Lettuce" Harbinger, from seed sown September 16th, 1892, but the produce was not particularly crisp and succulent, and no award was made. Mr. G. Monro, Covent Garden, sent several baskets of Mushrooms, grown by Mr. S. Hardy, Ash House, Parsons Green, firm, good samples, for which a bronze medal was recommended. An accompanying note stated that 3764 lbs. were cut from outdoor-beds during the past seven weeks.

**FLORAL COMMITTEE.**—Present: W. Marshall, Esq. (in the chair), Messrs. C. T. Druery, H. B. May, Richard Dean, Geo. Stevens, C. F. Bause, Geo. Gordon, R. B. Lowe, C. Jefferies, W. C. Leach, J. Jennings, C. E. Pearson, W. Furze, W. Bain, C. J. Salter, Ed. Mawley, C. E. Shea, J. D. Pawle, Jas. Walker, J. Bennett-Poë, T. Baines, Geo. Paul, H. Turner, Peter Barr, Robert Owen, John Fraser, J. H. Fitt, and Rev. H. H. D'Ombrian.

Messrs. J. Laing & Sons, The Nurseries, Forest Hill, S.E., staged a very fine group of greenhouse flowering and foliage plants, amongst which were pieces of *Dendrobium crassinode giganteum* and *D. Wardianum*. Some *Clivias* in this group were very striking, as also were the Ferns and Palms (silver Flora medal). Messrs. Cutbush & Son, Highgate, exhibited a magnificent group of miscellaneous plants, including Azaleas and Ericas in variety, and Begonia Gloire de Sceaux, recently figured in our columns (silver Flora medal). A good collection of herbaceous flowers was shown by Messrs. E. D. Shuttleworth & Co., Fleet, Hants, who also had a large group of miscellaneous flowering and foliage stove plants (silver Banksian medal). A magnificent group of Cyclamens was exhibited by Mr. J. Odell, Gould Green, Hillingdon. The plants in this group were finely grown, and covered with flowers (silver Flora medal). Mr. W. R. Newport, Hillingdon, exhibited some well grown plants of Model White Primula. This is a favourite for market purposes, the habit being all that is desired (silver Banksian medal).

A collection of hardy flowers was exhibited by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham. The Narcissi in this group were very fine, more particularly *N. poeticus ornatus* and *maximus* (silver Flora medal). Messrs. Paul & Son, Cheshunt, showed a charming basket of herbaceous plants, which included excellent examples of *Hepatica triloba*, *Primula denticulata*, and *Sisyrinchium grandiflorum*. For a pan of *Scopalina Fladnichi* the same firm were accorded an award of merit (see below). Amaryllises were also exhibited by the same firm. The varieties included *Sirius*, *Salvator Rosa*, Mrs. Henry Wood, Mars, and Acme (silver Banksian medal). Messrs. P. Barr and Son, King Street, Covent Garden, staged a group of hardy flowers,

including *Chionodoxa Lucilliae*, *Fritillaria aurea*, *Narcissi*, *Sisyrinchium grandiflorum*, and others (bronze Banksian medal). From the Royal Gardens, Kew, came a group of hardy shrubs, prominent amongst which were *Prunus cerasiformis* var. *Pissardi*, *Ribes sanguineum* var. *glutinosa*, *Pyrus japonica*, and some varieties of *Rhododendrons*.

Messrs. Wm. Paul & Son, Waltham Cross, exhibited a very fine collection of Camellia flowers, for which a silver Flora medal was recommended. The same firm showed Tea Rose Corinna (silver Flora medal). Mr. P. Perry, gardener to J. C. Fasher, Esq., Middleton Hall, Brentwood, Essex, also exhibited some pots of Roses (silver Banksian medal). Mr. Bain, gardener to Sir Trevor Lawrence, Bart., staged a charming group of winter-flowering Begonias, including *B. odorata*, *B. nitida*, *B. Triomphe de Nancy*, and *B. Triomphe de Lemoine*, to which an award of merit was accorded (see below). Messrs. Jas. Veitch and Sons, Chelsea, showed a grandly flowered plant of *Rhododendron Early Gem*. The plant was a mass of bloom. Amongst the grand Amaryllises sent by the same firm were *Socrates*, *Eldorado*, *Corinna*, *Excellent*, and *Nimrod* (see below). *Corylopsis pauciflora* from Messrs. Veitch & Sons was awarded a first-class certificate (see below).

A silver Banksian medal was recommended to S. C. Zutwycne, Esq., Oakfield, South Eden Park, Beckenham (gardener, Mr. May), for a group of Amaryllises and *Clivias*. Mr. Chas. Brüggmann, Villefranche-sur-Mer, France, was adjudged an award of merit for *Chrysanthemum frutescens Alma Brüggmann*. Mr. J. Douglas, Great Gearies, Ilford, was awarded a vote of thanks for a basket of fine Cineraria blooms. Mr. C. Holden, Ealing, staged a small collection of Azaleas, Camellias, and other plants in bloom (silver Flora medal). A basket of Neapolitan Violets came from Lord Foley, Ruxley Lodge, Esher (gardener, Mr. Miller), the flowers being large and fragrant. Cinerarias were well represented by a fine collection from Messrs. J. James & Son, Farnham Royal, Slough, the flowers being large and the colours bright (silver Banksian medal). Messrs. Hugh Low & Co. staged, as they have done on former occasions, a collection of hard-wooded plants in flower, these forming quite a feature (silver Flora medal). Some *Clivias* (see below), *Anthuriums*, *Dracenas*, and *Caraguata cardinale* (award of merit) were shown by Messrs. B. S. Williams & Son, Upper Holloway. Amaryllis Greenlands Gem was well shown by Mr. Perkins, gardener to the Viscountess Hambledon, Greenlands. Mr. Leech, gardener to Duke of Northumberland, Albury Park, showed some profusely flowered sprays of *Deutzia candidissima* fl.-pl. G. F. Wilson, Esq., Weybridge exhibited a collection of Primrose flowers of different shades of blue, plum blue, and lavender.

**ORCHID COMMITTEE.**—Present: H. J. Veitch, Esq. (in the chair), Dr. Masters, Messrs. J. O'Brien, H. M. Pollett, H. Ballantine, T. W. Bond, W. B. Latham, H. Williams, E. Hill, J. T. Gabriel, Thomas Statter, G. R. Le Doux, E. Moon, W. H. White, J. Douglas, T. B. Haywood, S. Courtauld, and F. Sander.

Messrs. B. S. Williams & Son, Upper Holloway, staged a large, tastefully arranged group of Orchids, including some choice *Odontoglossums*, *Cœlogynes*, *Dendrobiums*, and *Cypripediums*; conspicuous amongst these were *Cypripedium Williamsi*, *C. Boxalli marginatum*, *Lycaste costata*, and some good forms of *Odontoglossum Alexandrae* (silver Banksian medal). Messrs. F. Sander & Co., St. Albans, also sent an interesting collection of choice Orchids. Among these *Phalanopsis Stuartiana*, St. Albans variety, was most noticeable; other good things being *P. Sanderiana*, *Odontoglossum Sanderiana* (very pretty), *O. hystrix*, *Cypripedium Dauthieri* (a yellow variety of *C. Harrisianum*), *C. Wallissi*, and *Phaius amabilis* (silver Banksian medal). A small collection also came from Messrs. Hugh Low & Co., Upper Clapton, amongst others being *Cypripedium callosum* Low's var., a very fine form.

T. Statter, Esq., Stand Hall, Manchester (gardener, Mr. R. Johnson), staged a well grown plant of *Lycaste Skinneri alba* (cultural commendation), bearing ten flowers, as well as some cut Orchid flowers. A few plants of *Phalanopsis amabilis*, Linden's var., were exhibited by Messrs. Linden, Brussels; and a grand spike of *Dendrobium splendissimum grandiflorum* came from W. E. B. Farnham, Esq., Quorndon House, Loughborough. Norman C. Cookson, Esq., Wylam-on-Tyne, exhibited a plant of *Cypripedium hybridum* Bryan (*Philippinense* × *Argus*), a fine form, bearing three flowers on one spike. A plant of *Cattleya Trianae delicata* was shown, this being supplied by C. L. N. Ingram, Esq. W. Furze, Esq., The Roselands, Teddington (gardener, Mr. Coombe), staged a large group of Orchids interspersed with stove plants (silver Flora medal). Several *Cattleyas* came from Messrs. Pitcher & Manda, Hextable. Mr. J. Foster, Berkhamstead, sent some *Cypripediums*, and the most noticeable of them being *C. Elliottianum*. Messrs. J. Laing and Sons, Forest Hill, exhibited Orchids amongst other plants. Some interesting hybrids likewise came from Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea. The latter contribution included *Dendrobium* × *Aeneas*, *Epiphronites* × *Veitchi* (*Epidendrum radicans* × *Sophronitis grandiflora*), and others. Baron Schröder, The Dell, Egham, sent a small plant of *Laelia* × *Viellina*, an exceedingly pretty hybrid, for which a first-class certificate was awarded.

A group of *Odontoglossums* came from W. Thompson, Esq., Walton Range, Stone, and another from C. J. Lucas, Esq., Warnham Court, Horsham (gardener, Mr. Duncan). W. Soper, Esq., Clapham Road, sent a contribution of various Orchids, as also did F. Wigan, Esq., East Sheen, the latter having a grand plant of *Cœlogyne pandurata* (cultural commendation). G. R. Le Doux, East Moulsey, sent a small group, and Messrs. Fred Horsman & Co., Colchester, were adjudged an award of merit for *Lycaste Skinneri* var. *Hettie* (see below). Sir Trevor Lawrence, Bart., Dorking (grower, Mr. W. H. White) sent a charming



group containing *Odontoglossum Ruckerianum splendens* (see awards), *Maxillaria sanguinea*, *Cypripedium Rothschildianum*, and *C. Elliotianum* (silver Banksian medal). A. H. Smee, Esq., The Grange, Carshalton (gardener, Mr. G. W. Cummins), staged three magnificent spikes of *Cyrtopodium Saintlegerianum*.

#### CERTIFICATES AND AWARDS.

*Calogyne Sanderæ* (F. Sander & Co.).—An exceeding pretty species, bearing rather small flowers on an upright spike. The sepals and petals are cream, the fimbriated lip being similar, with a rich orange throat (first-class certificate).

*Lycaste Skinneri* var. *Hettie* (Fred. Horsman & Co.).—A very fine form of *L. Skinneri*, resembling the latter in general appearance, but with a pure white lip and rich carmine throat (award of merit).

*Dendrobium nobile Ballianum* (F. Sander & Co.).—An interesting form of a well known type. The sepals and petals are white with a very faint rose tinge, the lip being also whitish with a rosy purplish tint edged with lemon yellow (first-class certificate).

*Odontoglossum Ruckerianum splendens* (Sir Trevor Lawrence).—The plant shown bore a graceful arching spike containing fourteen flowers. The sepals and petals are rose tinted, densely spotted with chocolate, the lip being similarly marked. The throat is lemon colour (award of merit).

*Maxillaria sanguinea* (Sir T. Lawrence).—A dwarf growing species, the flowers being almost hidden in the grass-like foliage. The blooms are small, of a brownish colour, with a rich crimson lip margined white (award of merit).

*Lælia × Viellina* (Baron Schröder).—A small plant bearing one flower of this exceedingly beautiful Orchid was shown. It is a hybrid of unknown parentage. The flower is self-coloured, the sepals, petals, and lip being of a rich orange shade. A small blotch of crimson is just discernible in the throat (first-class certificate).

*Clivia Scarlet Gem* (B. S. Williams & Son).—This is a splendid variety, with a large truss of flowers borne well above the foliage. The blooms are dark red, with an orange yellow throat (award of merit).

*Caragana cardinalis* (B. S. Williams & Son).—A very fine plant, with green leaves  $1\frac{1}{2}$  inch in width and about 18 inches in length. The flower is a rich cardinal red colour (first-class certificate).

*Chrysanthemum frutescens Alma Brüggmann* (Charles Brüggmann).—A pretty variety of *C. frutescens*, the flowers being of a creamy hue, lemon yellow at the base of the petals (award of merit).

*Begonia Triomphe de Lemoine* (Sir T. Lawrence).—A charming winter flowering Begonia. The flowers are small, but of an attractive rosy pink colour, and borne in great profusion well above the foliage (award of merit).

*Amaryllis Socrates* (James Veitch & Sons).—A splendid variety, with flowers of a bright crimson shade. The plant shown had two scapes, bearing four flowers each (award of merit).

*Amaryllis Eldorado* (J. Veitch & Sons).—The flowers of this variety are large, of perfect symmetry, and rich crimson in colour (award of merit).

*Amaryllis Corinna* (J. Veitch & Sons).—A variety of sterling merit, bearing dark velvety crimson flowers (award of merit).

*Amaryllis Excellent* (J. Veitch & Sons).—Flowers of good symmetry, bright scarlet colour, striped with white (award of merit).

*Amaryllis Nimrod* (J. Veitch & Sons).—This is a magnificent variety with flowers of gigantic proportions. The scape of the plant shown bore four blooms. In colour the flowers are bright crimson (award of merit).

*Corylopsis pauciflora* (J. Veitch & Sons).—This is a hardy shrub from Japan, and the three plants shown were loaded with small yellow flowers (first-class certificate).

*Fritillaria aurea* (T. S. Ware).—The flowers of this comparatively well-known plant are golden spotted with dark brown (award of merit).

*Scopolina Fladnickiana* (G. Paul & Son).—A robust plant, bearing bell-shaped flowers, greenish yellow shade (award of merit).

*Amaryllis Salvator Rosa* (G. Paul & Son).—A distinct variety with rich red with a purple tinge streaked with white (award of merit).

#### THE EFFECT OF COLOURED GLASS ON PLANTS.

AT the afternoon meeting a lecture on the above subject was ably delivered by the Rev. Professor G. Henslow. In opening his subject the lecturer referred at some length to the necessity of light in the germination of seeds. This was still an open question, as experiments conducted by some authorities have been almost directly opposed to each other. It was, however, found that for dark coloured and oily seeds light was really essential; in other cases darkness appeared to be preferable.

The lecturer then referred to some experiments conducted by himself in the use of coloured glass. The colours used were violet, blue, red, green, and yellow. By this means he proved conclusively that it was most injurious to grow hardy plants under any kind of glass. In conducting experiments with seedling Lettuces yellow was found the most satisfactory, and green the worst, but under neither of these were the plants equal to those grown in the open air. After all the experiments which the lecturer has conducted he is still in doubt, and has therefore determined to go through all the trials again, and the result cannot but be interesting when coming from such a source. Violet coloured glass, Mr. Henslow remarked, has been used by a London grower of market flowers, who asserts that by using this colour he can advance his blooms by fourteen days. This, of course, should only be tried on plants grown expressly for their flowers, not on foliage plants, or the effects would doubtless be injurious.

The conclusion arrived at by the lecturer was that for hardy plants no glass at all should be used, either coloured or plain, except of course for purposes of protection against the inclemency of the weather. There could be no question that the light afforded by the sun was the best in every way.

The lecture was rendered more interesting and instructive by the tables which had been drawn up to demonstrate more clearly the results of all the experiments. A vote of thanks was accorded to Professor Henslow for his excellent lecture.



#### SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE adjourned annual meeting of the above Society took place on March 8th at the Museum, Orchard Street, Mr. John Haigh presiding. The question of shortening the long and cumbersome name of "Sheffield, Hallamshire, and West Riding United Chrysanthemum Society" was discussed, and it was unanimously resolved that henceforth the official title of the Society should be "Sheffield Chrysanthemum Society."

At the same meeting there was a strong competition among the exhibits of Cinerarias, some fine plants being shown. Amateurs were allowed to exhibit any plant in bloom, which brought an excellent Cyclamen and Azalea.

Mr. H. Broomhead, F.R.H.S., gave a most practical and interesting address on "The Approximate Times for Stopping to Procure the Correct Buds." Great interest was evinced in Mr. Broomhead's remarks, which consisted of giving the exact dates of spring stopping which he had found most conducive in bringing about the desired results of having the best blooms at the right time with the varieties he mentioned. He also pointed out peculiarities of growth, as well as the right buds—crown or terminal—to "take" in each case.

Mr. Broomhead being a most successful and enthusiastic grower of Chrysanthemums, intends to give at each monthly meeting brief and seasonable hints on current management for the benefit of the members. His information so freely given at this meeting was highly appreciated by a numerous audience, and he was deservedly thanked for it, as well as for his generous intentions in the future for promoting Chrysanthemum culture. Mr. Haigh was also thanked for presiding.—E. D. S.

#### EARLY-FLOWERING CHRYSANTHEMUMS.

A SHORT note by "Sadoc," in the *Journal of Horticulture*, page 158, alluded to the Madame Desgranges family, white and yellow, as being suitable for borders. But why stop at these, when there are a score of other beautiful varieties, and quite as useful, that can be had in flower from July till November? Their culture is so simple that they are eminently suited for the single-handed gardeners and amateurs who have, perhaps, no greenhouse. Plants can be procured in May, and if immediately planted out in good soil they will soon become established. Of course the more attention given them the better will be the results, but, beyond watering in very dry weather and a little liquid manure when the buds show, they will look after themselves.

The following varieties I have found do splendidly in the west of Scotland:—August—Pompons: Blushing Bride, Early Blush, Mr. Selby (blush); Duchess of Fife, White St. Crouts, and St. Mary (white); Golden Shah, Golden Fleece, Flora (yellow); Fred Pélé (crimson); Maud Pitcher, Percy's Seedling, and La Luxembourg (bronze hues); Japanese: Madame Desgranges, Mrs. Hawkins, Mrs. Burrell, and Grace Attick (the latter a particularly pretty white). September—Pompons: Madame Leon Lassala, Madame Jollivart, Mrs. Cullingford (white); Précocité (yellow); La Ami Conderchet (primrose); Japanese: P. Radelli, La Perle, Arthur Creepy (white); Madame Toucher de Cariel (perhaps the finest early grown), Madame Leon Collin (bronzy hues); Madame Ernest Bergman, Rose Laing, O. J. Quintus, Mrs. J. R. Pitcher (pink shades); Roi des Précoces, Mons. A. Dufour, and Mons. W. Holmes (crimsoms).

The above contains the best of early flowering varieties, so far as I can judge after annually growing some 4000 plants and buying all the new ones for trial. There are among those of recent introduction some charming varieties, but these I have only grown in pots this season, so cannot say how they will stand the winter in open borders. Perhaps the pick of forty or fifty newer varieties are J. B. Duvoy (pink Pompon), Vicomtesse de Arene (lilac incurved), Reine Chaudon de Brialles (reddish violet); Japanese: Coral Queen, Mons. Dupuis (orange yellow), and, finest of all, Mons. Gustave Grunerwald, a Japanese, pink shade, blooming in August, a gem in every way, but not over-robust.—ANGLO-SCOT.

#### THE NATIONAL CHRYSANTHEMUM SOCIETY AND MR. DEAN.

I MUST insist upon G. Matthew giving his authority for the statement he makes on page 202 of your last issue as follows:—"Why the bitterness with which Mr. Dean pointed out that two provincial growers who were proposed as members of the Committee had taken part in it, and suggested that therefore they ought not to be elected." I give the paragraph my



most unqualified denial. As the name of "G. Matthew" does not appear in the attendance book as present at the annual general meeting, and as there is no member of the Society of that name as representative of an affiliated society it would be interesting to know upon what this second-hand statement is founded.—RICHARD DEAN, *Secretary*.

[Our correspondent, Mr. Matthew, sent his address in due form. There is more "second-hand," also some "first-hand," information in other communications that the Secretary will peruse, and he will be in a position to admit or deny its accuracy.]

#### HOW THE N.C.S. CONDUCT THEIR BUSINESS.

I HAD promised to attend the General Committee meeting of the N.C.S. on the 6th inst., and so that I should not miss any of the business I determined to be in time. I arrived at Anderton's Hotel, Fleet Street, a few minutes before 7.30, and after inquiring of the porter for the N.C.S. Committee-room, I found myself in quite a little crowd going in the same direction. We entered the room and discovered the cabinet ministry of the Society in solemn conclave at the head of the table. Wonderful men for punctuality these committee men are; it was scarcely 7.30, and the large room was nearly full.

It was evident from the genial expressions of welcome extended to us by the Chairman, that something more than the ordinary business had secured such a good attendance of both members and representatives of affiliated societies, and I soon learned that the excitement was to be centred on the first attempt of the Society to carry out their elections by ballot.

The ordinary business was quickly disposed of, and with the exception of one little surprise was a trifle tame. The incident referred to was this: While the Secretary was on his feet addressing the meeting the glass swing doors at the end of the room were suddenly thrown open, and a tall, pleasant-looking man, with a happy smile on his face, entered. I looked in astonishment when I heard someone near me whisper, "It's His Worship, the Mayor," and was somewhat disappointed to find he had come without his chain and robes of office. A thrill of excitement ran round the room, the Secretary put aside his books and papers, and, having selected and smoothed a chair, with solemn deference called upon His Worship to advance to within the sacred precincts of the cabinet there assembled, nods of recognition were passed to one or two favoured members, and the business proceeded.

First came the election of members of the Floral Committee in the place of retiring members, but someone tried to rob us of the very experiment we had come there to enjoy, by moving a resolution that the election be by show of hands as heretofore. But no sooner was this done than a young man in glasses rose to his feet and moved an amendment that the vote be taken by ballot. His few remarks very soon secured for his amendment a large majority, and the business proceeded.

The all-important election of the Floral Committee by ballot was voted by all a success. Now came the election of a Chairman from among that body. Two gentlemen were nominated, and several present took it in turns to testify to the good qualities and capabilities of these two gentlemen until the compliments were exhausted. The N.C.S. seems to be great in compliments, but they cannot go on for ever; and "business" was called by the Chairman.

The ballot system was again brought into requisition, with the result that Mr. C. E. Shea was declared elected. The Chairman announced that the scrutineers had received forty-two voting papers, one was spoiled, twenty-one votes were given to Mr. Shea and twenty to his opponent; the business closed, hats and coats were donned, and general chatter became the order of the day; little knots of members were to be seen gathered in different parts of the room, and, getting hemmed in by the family gathering, I was witness to some very indignant remarks about the election of the Chairman. "Did you get a letter from Mr. Dean?" seemed to be the general question all round, followed by a reply in the affirmative and the production of several letters marked "private," written on paper with the National Chrysanthemum Society's heading, and signed by the Secretary, asking the recipient to come to the meeting and 1, vote for Mr. C. E. Shea as a member of the Floral Committee; 2, Vote for Mr. C. E. Shea as Chairman of the Floral Committee.

Nothing more was to be done, the meeting had broken up, and I am told, according to the general practice, no meeting of the General Committee would be held until late in the autumn. Some of the recipients of these "private" letters from the Secretary had been flattering themselves they were favoured by being in the private confidence of that official, but when it was discovered that this letter had been sent round to several members indignation ran high. Many declared that Mr. Shea had been elected by a trick, and others alleged that a paid Secretary had no right to send round a circular letter to bias a meeting.

I am not well acquainted with the method of conducting business by this Society, but I venture to think (to put it in a mild form) it was extra officious if not unmanly on the part of the Secretary to send these letters against an old and respected member unknown to him, and I noticed particularly the Secretary took care to record his own vote. He may argue, that as a paid officer he has no right to a voice in the proceedings of the Society, but as a member he has a perfect right to influence members. This may or may not be so, but I am inclined to think, with those whose voices I heard at the meeting, that it showed exceeding bad taste, more especially as the circular letters, although they appeared to be marked private, were headed National Chrysanthemum Society, and in some cases the request to record their vote for

Mr. Shea was added by way of a note to the usual printed postcard sent out convening the meeting.—A COUNTRYMAN.

#### THE N.C.S.—"YET THERE IS NO CLIQUISM?"

BEFORE I write on my text will you allow me to answer Mr. Jas. Hamilton, whose letter appears in the last issue of the Journal? Mr. Hamilton informs us that he desires no personalities, and yet he is willing to journey to London and vote me the "very best" medal if I will only publish the letter containing the name of the member I complain of. What is this but a request for a personality? The first article contains a complete charge minus the name. It is the *principle* I attack, not the man, and it is also on behalf of horticulture that Messrs. Pearson, Goodacre, myself, and others take our stand. Very likely the controversy has advertised Beauty of Exmouth, for at present I have more orders than I can execute. But if such be the case, I cannot help it; in fact, have no desire to do so. Now to my text.

Mr. Dean, in the issue for December 1st last, in answer to Mr. Pearson's remarks on "cliquism," says, "But I know of no special Society against which the charge of 'London cliquism' can be more unjustly brought than the N.C.S. Further, I have now been a member of the Committee for some eight years, and I witness plenty of independence in speech and act, but nothing which can be designated 'cliquism.' Let Mr. Pearson get himself appointed as its representative (Notts Horticultural Society) on our Committee and come among us, and become acquainted more fully with our procedure, and I am quite certain that with wider knowledge there will inevitably follow a more enlightened and juster conception of the methods of the National Society."

These are words and very grand ones too, but will the methods and procedure which Mr. Dean seems so proud of correspond? The Wells case is well known and it is settled, but Mr. Dean and the principal officers cannot boast of their part in the settlement. There is, however, one point in this case that no one seems to have specially noticed—viz., not alone did the nameless member base his threat on the fact that his fellow tradesman owed him a small account, but also because some of his varieties were priced lower than those of the member alluded to. But to return to my text, "yet there is no cliquism."

When Mr. Goodacre proposed Mr. Pearson as a member of the Committee, what was Mr. Dean's action? Did it correspond with his letter, a portion of which I have quoted? In my letter of last week I asked why a certain member's name was given such prominence. No one can say why, but a member of the Floral Committee writes me that others did as much as the member Mr. Dean attempts to glorify. When Mr. Addison proposed a rule for the purpose of putting the Society on a sounder basis, Mr. Dean and others objected to it; and I am informed he threatened to resign if the rule was passed. Yet Mr. Harman Payne in a recent letter informs us that, "Even supposing a member of the Society were guilty of the grossest irregularity and proved to be so, there is no rule by which his expulsion could be effected." Then why, may I ask, did not Mr. H. Payne support Mr. Addison in establishing such rule? It was only intended for dishonest members. Those who did their duty in a straightforward and manly way had nothing to fear from it.

The Society has recently adopted a rule by which the Chairman of the Floral Committee must be selected from that body. Two gentlemen were nominated to the position, but the Secretary, I have reason to believe, issued notices prior to the election requesting members to vote for the gentleman who obtained the honoured position by one vote only; and "yet there is no cliquism;" "but if Mr. Pearson will get himself appointed," &c., "and come among us and become acquainted more fully with our procedure, I am certain that with wider knowledge there will inevitably follow a more enlightened and juster conception of the methods of the N.C.S." Really! and does the issuing of these notices account for "plenty of independence of speech and act," which are displayed at the meetings? That all your readers may judge for themselves I attach a copy of the notice hereto.

*Private.*

NATIONAL CHRYSANTHEMUM SOCIETY.

*Ealing, London, W., Feb. 28th, 1893.*

Dear Sir,—I shall be much obliged if you can attend the meeting of the General Committee on Monday next, March 6th. 1, Vote for C. E. Shea, Esq., as a member of the Floral Committee. 2, Vote for C. E. Shea as Chairman of the Floral Committee.—R. DEAN.

Here we have a case of the paid Secretary of a "National" Society doing all he can to influence votes against one of its oldest and most respected members, who, I am informed, never sought the position to which he was nominated, and did not canvas for votes as against Mr. Shea. Would Mr. Dean consider it straightforward and honourable on the part of myself, for instance, to, in a "private" way, attempt to influence members of the Society against himself? I trow not, nor can I believe that Mr. Shea was cognisant of the extraordinary action of the Secretary in his behalf. I am not informed whether the private touting of the Secretary was on the official paper of the N.C.S.; if it was it was an official act and I suspect, wholly unparalleled, whether it is condoned or not. "The servant shall not be above his master," says a grand old book. We shall see if the members of the N.C.S. are content with the action of their servant against one of his masters—a member of the Committee—who, we may fairly presume, would have been elected to the position to which he was nominated had they not been influenced by the Secretary, not in a frank, open, independent



manner, but in what was obviously a private move against Mr. George Gordon; and yet, once more, "there is no cliquism!"—W. J. GODFREY, *Exmouth*.

#### THE N.C.S. ANNUAL MEETING.

A SHORT time since the Floral Committee decided to hold their meetings in private, the reason apparently being that its proceedings were of such a character that, if made public, would add nothing to the credit of the Society. Judging by the report given of the late annual meeting, would it not be well for the Society to consider the advisability of holding all meetings in private? As the Secretary appears to favour "private" methods, he may be expected to fall in with my suggestion for increasing the prestige of the Society. — COUNTRY DELEGATE.

#### SUMMER PRUNING VINES.

I HAVE no desire to criticise Mr. Stephen Castle's practice in Vine culture, as there is no man who grows Grapes better than he does, or who has obtained better results from a commercial point of view. Having seen his work I am in a position to know that the practice of pinching Vines in summer, which he recommends in the *Journal of Horticulture* (page 155), he carries out in the way he describes; but that does not prove that the same method is always the best. Most of us are willing to allow that circumstances alter cases, and this is a case in point.

Mr. Castle plants his Vines rather closer together than most people, so close in fact that he has not room for an extended lateral growth. There is another thing he does with evident benefit to young Vines. They are cut down much lower than most gardeners care to do, according to their strength at the time of planting; but that his practice is sound I have had ocular demonstration. The secret of his success in pinching Vines—if it is any secret—consist in the fact that he does it judiciously, just as one might expect such a skilful grower would do. Mr. Castle's practice, as he explained to me, is not to pinch back the lateral growth until the second or third leaf was well developed. When such is the case we can quite understand that there is sufficient leaf growth left to carry on the functions of the plant, and that the future fruiting buds are secured because of the well-developed leaves being present to foster and sustain them.

While, however, I agree with your correspondent that this close pinching is right enough in some cases, I am equally as certain it is not suitable to all. If the cultivator starts with a weakly Vine, and if he wishes to keep it in that condition, he cannot do better than to follow a persistent course of pinching back the lateral growth; on the other hand, if a weak Vine is to be converted into a strong one in the shortest possible time, it must be allowed to make all the growth possible. This, of course, is a fact well known to experienced gardeners; but I am afraid if this difference regarding the strength of the Vines operated upon is not pointed out, that it might lead to some mistakes.—J. C. CLARKE.

#### BIRDS AND FRUIT BUDS.

CURRENT bushes that had their branches tied closely together and further protected by a few decayed annuals have not a bud touched by the birds. I have for a long time observed that birds do not molest our fruit bushes unless previous to or during rainy weather. December and January were on the whole dry months, and the birds did not interfere with the buds. February, on the other hand, has been stormy, and the bluetits made their appearance, and in a short time did great havoc to some Gooseberry bushes.

Mr. J. Hiam and others do not believe the tits peck buds, but they may have a surprise some day. Dissecting the craws of birds, unless very carefully done, is not a satisfactory way of proving whether they peck buds or not, for they swallow the embryo blossom only, and it being of a friable nature may not be easily discovered; but there is no mistaking they are the depredators. If the bushes are examined immediately the tits leave them, it will be found that the buds are gone from the branches, and with the exception of the pleasing morsel the rest lie like chaff on the ground. As I have witnessed their depredations in about half a dozen counties, coupled with the fact that I have been asked often by different persons if I could suggest some plan to prevent the "zaupets" (their local name) destroying the fruit buds of Plums, Currants, and Gooseberries, I am firmly convinced that the tits do cause injury to fruit buds.—W. T.

#### FLOORS CASTLE GRAPE ROOM.

IF Mr. Barnes (page 203) has not already read the history Mr. McKelvie gives of the Floors Vines on the same page, I have only to refer him to it to make him aware of the fact that I have not to go very "far afield" in search of corroborative evidences to prove "the fact" that Grapes were both well grown and kept before the clever invention of the celebrated Grape room at Floors, about which Mr. Barnes seems desirous to raise some peevish argument as to whom is the most entitled to claim the patent.

On referring to my so-called "briefs," which were published in the *Journal*, I find the first on page 31 of January 12th; the second on page 79 of January 26th. The former is a plain readily understood system of keeping Grapes successfully, while the latter is an undisguised piece of sarcasm not so readily understood.

I am not an employed advocate to any clan, neither do I aspire to be a light to the talented; it remains quite optional to Mr. Barnes to read, much less digest, any note from my pen, and quite unnecessary to repeat any already well known history such as he supposes my short references to Penrhyn to be. But as Mr. Barnes now has opportunities to show his genius, it may be in his power to achieve some high feat beyond our reach, and thus place his patent beyond dispute; yet I hope Mr. Barnes may possess more grace than to charge those who "smile on the plan he adopts" with "idiosyncrasy."—J. H. GOODACRE.

#### PLATYLOBIUM FORMOSUM.

LIKE many other hard-wooded plants, the *Platylobiums* are not grown so extensively as they formerly were, notwithstanding their decorative merits. There, however, are several species well worthy of



FIG. 46.—PLATYLOBIUM FORMOSUM.

the attention of plant growers, and that shown in the illustration (fig. 46) is deserving of universal cultivation.

When well grown *P. formosum* is a most beautiful object, and will thrive well under the conditions generally assigned hard-wood plants. It is a free branching plant, and the stems are slightly hairy. The leaves are dark green above, paler below. The buds are deep crimson, and when expanded the back of the whole flower retains this colour, whilst the front side is rich orange yellow, saving a reniform belt of radiating crimson lines near the bottom of the standard. The flowers are produced during the summer.

#### SCIENTIFIC CRITICISM.

MOST certainly kindly intended, but still apparently incomprehensible, was the criticism passed by the Editor of the "Gardeners' Chronicle" on a couple of remarks in Mr. J. Wright's little Horticultural Primer, which was under review. The statement that the stored sap in a cutting is first utilised to form a callus at the base, and from that callus roots are developed, a fact which all who have ever put in cuttings of any



description know to be practically correct, is yet termed scientifically incorrect. It is not the first time in which science and practice have been found out of harmony, and it would in this case seem to be all the worse for the science, or what is termed scientific teaching. Whilst indulging in this piece of destructive criticism, would it not have been better to have gone a little further and found out where it was that scientific theory did not sustain what is always regarded as physiological practice? To have done that would have been constructive criticism. Then, further, it is said that the author of the Primer is not correct in stating that a Crab tree may be changed into an Apple tree by budding or grafting. Scientifically that may be an inexact expression, but practically it is right, and in such a book as is referred to it is a proper expression, because it carries conviction to the unlearned. Of course, in budding, the Crab stem and root remain Crab as long as the stock endures, but the head—and that is the only part of the tree that produces fruit—is just as much an Apple tree as if on its own roots. After all, the public have more regard to simple, practical truths than for scientific refinements.—OBSERVER.

[I have received other letters to the same effect, but it is scarcely worth while to dwell on methods of criticism. The reviewer was, of course, scientifically correct, and had the contexts and explanations been published, with the qualifying terms of sentences, he would perhaps have recognised their influence. In severe excisions for press, the matter retained often suffers in explicitness. The Surrey horticultural lecturers really do know that the stocks of trees retain their characteristics when distinct varieties are established on them, and so explain; they also know enough about propagating to teach the inexperienced how they may succeed and why they may fail. That is the substance of the matter, and the object in view. The lectures are for workers, not scientists. It is a reviewer's duty to point out what he conceives to be errors, and authors should endeavour to profit by wholesome criticism.—J. WRIGHT.]

#### UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

THE annual general meeting of the members of the United Horticultural Benefit and Provident Society was held at the Caledonian Hotel, Adelphi, W.C., on Monday, March 13th. There was a large attendance, and Mr. G. J. Ingram presided. Having read the minutes for the previous meeting, the Secretary (Mr. W. Collins) proceeded to read the annual report and financial statement, which were ultimately unanimously adopted.

According to the report the Society, we are glad to note, is in a most flourishing condition, which is a matter for congratulation. There has been an accession of fifty members during the past year, and consequently an increase of funds. Three death claims have been paid, and the sum of £88 12s. 8d. distributed to sick members; this being £30 less than during the previous year. The Benefit Fund has a balance upwards of £5486, an increase of £700 accruing last year. From the Benevolent Fund there is also a balance in hand of over £1857, whilst that of the Management Fund amounts to £37 6s. 4½d. The Voluntary Convalescent Fund has a balance of £172 19s. 7d., including £100 from Mr. H. J. and Mrs. Veitch in commemoration of their silver wedding, and to whom the members tender their best thanks. Three members derived benefit during the year from this Fund, which is steadily increasing, there being only a balance of £41 in 1892. The annual dinner was a success, and left a small balance. The Treasurer stated that £1000 had been invested during the past year in Three Per Cent. Stocks, this being the largest sum ever put by in twelve months. The substantial sum of £7700 was now invested in English corporations, the money being laid out as follows:—Nottingham Corporation, £5500 at 3 per cent.; Manchester Corporation, £1200 at 3 per cent.; and West Bromwich, £1000 at 3 per cent.

Mr. G. J. Ingram, in moving the adoption of the report, said that in looking hastily over the rules of the Society that morning it had occurred to him that the advantages derived from being a member of the Society were far before those offered by any other benefit society in the United Kingdom. By becoming a member a gardener was not only making provision in case of sickness, but practically was investing his money in a savings bank. Besides the Benefit Fund there was the Benevolent Fund, which, in his opinion, was a distinct advantage. This enables the Committee to assist distressed members and their widows in deserving cases. In addition to this there was the Convalescent Fund. Looking at all these advantages, the only surprising thing to him was the comparatively few members on the books, and yet the numerical strength is something the Society can be congratulated upon. In 1882 there were 104 members, in 1892, 448, and at present 474. That was a decided increase, but it was not so large as it ought to have been. As to the income in 1882, there were £243 6s. 8d., in 1891 £1037 5s. 6d., and last year £1228 7s. 7d. Of moneys invested in 1882 there were £2485, in 1891 £6700, and, as the Treasurer had stated, at present £7700, thus showing an increase of £1000 invested in one year. If a special effort were made pointing out these facts to gardeners, he thought there would be a still further large accession of members. In his opinion, the only weak link in an otherwise strong chain was the Management Fund. These are days of progress, and if each member were to contribute, say 1s. a year extra the Management Fund might be augmented. Every advantage should be taken to let gardeners know of the existence of the Society. He would conclude by asking those present to obtain new members, and so make the Society

worthy of its name the "United Horticultural." It was a Society they could with confidence recommend to gardeners. (Applause).

The election of the officers for the ensuing year followed at this juncture. The retiring members of the Committee were re-elected, with the exception of Mr. Dickens, who retired. On the proposition of Mr. Hudson, Mr. Hemsley was elected in his place. Mr. W. Collins was unanimously re-elected as Secretary, and a cheque of £28 18s. 6d. was handed him for his services during the year; this amount included £5 for special attention to the Convalescent Fund for the past three years. Mr. Hudson was also re-elected Treasurer. It was stated that eleven new members had been elected that evening, and the Committee were considering the advisability of having an emblem for the Society.

Votes of thanks to Mr. H. J. Veitch and Mrs. Veitch for their generosity in subscribing £100 to the Convalescent Fund, also to the Trustees, Auditors, and the Chairman, were accorded.

#### LIVERPOOL SPRING SHOW.—MARCH 10TH.

THE annual spring Show was held in St. George's Hall on the above date, and although the room was not quite so well filled as in former years, the Exhibition was of a bright and diversified character. Hyacinths and Tulips were excellent, and the Orchids were of remarkable quality, particularly *Odontoglossum Edwardsi*, shown by Mr. J. Jellicoe, gardener to F. H. Gossage, Esq., Camp Hill, Woolton; and *Cypripedium Rothschildianum*, shown, "not for competition," by Mr. J. Edwards, gardener to Henry Tate, Esq., jun., Allerton Beeches. A first-class cultural certificate was awarded for the latter plant.

Messrs. R. P. Ker & Sons, Aigburth Nursery, staged a bank of seedling *Imantophyllums* in 6-inch pots. The forms were decidedly superior to any hitherto seen in Liverpool, fine massive trusses, and flowers of great substance and perfect form being their chief characteristics. A first-class certificate was unanimously awarded. A similar award was made to Messrs. Dicksons, Limited, Chester, for a grand display of Daffodils arranged in sprays and edged with pots of Scillas. Messrs. T. Davies and Co., Wavertree Nursery, exhibited a collection of spring flowering plants, and secured a certificate. Messrs. Fishlock Bros., St. John's Market, were also granted a similar honour for a charming display of wreaths and crosses.

For a group of miscellaneous plants arranged for effect, and occupying about 60 square feet, Mr. J. Jellicoe was first with a pleasing arrangement, having a centre Palm, Crotons at the corners, a groundwork of Maidenhair Fern, from which peeped some charming pots of *Lachenalias*, Orchids, and Daffodils, the edging being of *Panicum variegatum*. Mr. T. Moorhouse, gardener to R. Brocklehurst, Esq., Sandford Park, West Derby, was the other exhibitor. For ten pots of hardy herbaceous bulbous plants, Mr. J. Bounds, gardener to A. L. Jones, Esq., Oaklands, Aigburth, was an easy first. Mr. J. Harrison, gardener to Mrs. W. G. Bateson, Elmhurst, Aigburth, was second; and Mr. T. Hitchman, gardener to Arthur Earle, Esq., J.P., Childwall, third. For six forced hardy plants (*Azalea amoena* excluded) the same exhibitor was first, having a splendidly flowered *Deutzia gracilis* and *Azalea mollis*. Mr. T. Winkworth, gardener to R. Brocklebank, Esq., Childwall Hall, was second. For bouquets, Mr. T. Carling was first in both classes; also in a very strong competition with six pots of Lily of the Valley, wonderfully well flowered.

For eighteen Hyacinths, distinct, Mr. T. Wilson, gardener to O. H. Williams, Esq., Fulwood Park, Aigburth, was first with *La Deul*, Captain Boyton, Lady Palmerston, *La Grandesse*, Marquis of Hartington, *Koh-i-Noor*, *Mont Blanc*, *Obelisque*, Lord Macaulay, Charles Dickens, *Orange Broom*, *Ida*, *Gigantea*, *Schotel*, *Von Schiller*, *King of the Blues*, *Czar Peter*, and *Florence Nightingale*. Mr. W. Peers, gardener to C. E. Terry, Esq., Woolton, was second, and Mr. J. Kelly, gardener to R. Singlehurst, Enfield House, Aigburth, third. Mr. J. V. Thompson, gardener to W. P. Sinclair, Esq., Prince's Road, staged an admirable collection of twelve Hyacinths, securing the first prize; Mr. T. W. Wilson was second. For six Hyacinths, Mr. F. Salisbury, gardener to W. Poulson, Esq., Breeze Hill, Bootle, was first. For the special prizes offered by Messrs. T. Davies & Co., Wavertree Nursery, for six pots Hyacinths, three bulbs in each pot, there was strong competition. Mr. T. Wilson was first, and Mr. H. M. Coates, gardener to J. Smith, Esq., Newstead, Wavertree, second. Mr. T. Hitchman gained the prize for six pots of *Polyanthus Narcissus*.

For twelve pots of single Tulips Mr. W. Kneale, gardener to Major Gaskell, Roseleigh, Woolton, was first, having fine *Keizer Kroon*, *Duchess of Parma*, *Proserpine*, *Ophir d'Or*, red and white *Joost Van Vondel* as his best. Mr. H. Holford, gardener to Chas. McIver, Esq., Beechwood, Heswell, Cheshire, was second; and Mr. J. Kelly third. Mr. Coates was first for six pots of single Tulips, the prize for six pots of double Tulips going to Mr. H. Holford. Mr. J. Jellicoe secured the first prize for six pots of Daffodils.

For two *Amaryllis* Mr. J. J. Craven, gardener to J. G. Grant Morris, Esq., Allerton Priory, staged *Imperial*, a grand dark variety; and *Virgin Queen*, a white flower striped with crimson. Mr. C. Osborne, gardener to H. J. Robinson, Esq., Aymestry Court, Woolton, was second. For six stove and greenhouse plants only Mr. J. Jellicoe exhibited. Mr. T. Moorhouse staged a superb *Clerodendron Balfouri* in bloom, the prize in the corresponding class for a greenhouse plant being taken by Mr. T. Winkworth with a fine *Imantophyllum miniatum*. Mr. Winkworth was also first with two trained *Mignonette*, three *Callas*, and two bunches black Grapes, showing *Black Alicante*.

Three Orchids in flower were shown by Mr. Jellicoe, first; Mr. J.



Bounds, second; Mr. T. Healy, gardener to Colonel Wilson, Hillside, Allerton, third. The prize for one Orchid went to the latter exhibitor for a good plant of *Cattleya Trianae*. He was also successful in classes for one Fern, three Palms, including a magnificent *Cycas revoluta*, and one Palm.

Mr. Moorhouse won in the classes for the most tastefully arranged box of Roses, not to exceed 24 inches by 18 inches, six *Cinerarias*, one hardy *Rhododendron*, and was second in classes for four and one *Azalea mollis*, the first honours going to Mr. J. Harrison with fine specimens. For four hardy *Rhododendrons*, Mr. J. Kelly was first; Mr. Moorhouse being second. The former exhibitor was also placed first for six *Dracenas*, six table plants, and one *Azalea*. For three *Azaleas*, Mr. W. Wilson, gardener to H. Cunningham, Esq., Gorsey Cop, Gateacre, was first, and Mr. Jellicoe second. For four *Azaleas*, pots not exceed 8 inches, Mr. C. Osborne was an easy first.

Primulas and Cyclamen have never been shown in such splendid condition, every collection being worthy of a prize. The first honours in each class went to Mr. A. Lewis, gardener to Thos. Neal, Esq., Beechwood, Aigburth. Mr. W. Kneale was commended for a basket of Auriculas.



#### FRUIT FORCING.

**Peaches and Nectarines.**—*Early Houses.*—Thinning the fruits must be proceeded with, regulating the number reserved for swelling off by the strength of the trees and the varieties, always leaving a few more before stoning for meeting casualties during that process or removal after it. Size and quality being the first consideration, one Peach of the varieties that attain the largest size to every square foot of trellis covered with foliage will be found a heavy crop. The varieties that produce fruit of medium size, as *Early Louise*, will be accommodated in a space 10 inches square, and the small, as *Early Beatrice*, swell perfectly when each fruit is given a square of 9 inches. The young shoots having been neatly tied in close to the base, and the superfluous growths removed or pinched back to form spurs on the extension branches, the trees should be allowed to make free growth until they are sufficiently advanced for the general tying down to the trellis. Any shoots that show a tendency to become too strong should have the points pinched out before they have time to disturb the balance of the trees. Growths retained on a level with or above the fruits to attract the sap to them must be kept topped at a joint or two of fresh growths, so as to concentrate it on them. When the weather is bright syringe with tepid soft water twice a day, but in dull weather the syringing must be omitted or done sufficiently early to allow the trees to become fairly dry before night. When syringing is not practised a genial condition of the atmosphere should be secured by damping the floors and borders in the morning and again before night, affording a sprinkling of tepid liquid manure in the evening occasionally. A light mulching of lumpy manure will assist in keeping the borders moist and supply food to the roots. The soil must be kept moist by judicious watering. It is a good plan to turn off the fire heat early on fine mornings, admitting a little air, and increase the ventilation with the advancing temperature. A steady night temperature of 60°, with a rise of 10° to 15° by day, should be maintained until after the fruit is stoned, when the ripening may be hastened if desired by a higher temperature.

*Succession Houses.*—Disbudding must be attended to when the growths are sufficiently advanced. Growths on extensions not required for forming the bearing shoots of next year may be pinched for spurs, and all wood that is not likely to be wanted for the support of the present or the production of the next year's crop of fruit should be cut away. Avoid, however, large reduction of growths at a time, proceeding gradually; and in disbudding commence at the extremities of the trees, and work down to the base. Small or badly placed fruits should be removed as soon as the most promising for the crop can be decided upon, not leaving more to attain the size of marbles than a third of that intended, and only a per-centage of about 25 should be left after they reach the size of pickling Walnuts for meeting casualties in stoning. A temperature of 55° to 60° at night, according to the advanced condition of individual houses, will be sufficient, with 10° to 15° rise by day. Syringe the trees, and supply water as advised for the early houses.

*Later Houses.*—The trees that are to ripen their fruit in August will now be in flower, and should have a day temperature of 50° by artificial means, with 10° to 15° advance from sun heat, and a free circulation of air, the heat falling to 45° at night, with a little ventilation to prevent the deposition of moisture on the blossoms. Where bees visit the houses it is a certain indication of a good set, for these instinctive creatures seldom trouble flowers that do not contain the essential nectar and pollen. When bees do not visit the houses when the trees are in blossom the trellis should be shaken early in the forenoon and again shortly after noon, or the flowers be carefully fertilised with a camel's-hair brush, a feather, or rabbit's tail mounted on a small stick. Late houses should have a free circulation of air with a view to retarding the flowering; but after the blossoms expand they should be kept safe from

frost, a night temperature of 40° to 45° being suitable, the heat being turned on in the morning so as to raise the temperature to 50°, and admit of ventilation. This is imperative, as the fruit does not set well in a confined atmosphere. Inside borders must have the needful supplies of water, not, however, rendering them sodden by needless applications.

**Melons.**—The plants first put out in the ridges or hillocks will now or soon have grown about 2 feet up the roof, and may be pinched if more than one main Vine is required. Train the shoots over the space not less than 1 foot apart; but for early crops it is better to allow the main shoot or stem to extend two-thirds up the trellis before stopping it, which will cause it to push laterals showing fruit freely. The blossoms on these should be carefully fertilised, plucking a staminate flower, removing its corolla, and then brushing its farina on the stigma of the pistillate blossom where it may be left, and at the same time stopping the shoot one joint beyond the inoculated blossom. Earth up young plants as the roots protrude, and transfer those in small pots to larger before they become root-bound, or plant them out before that condition is reached. Successional sowings and plantings must be made according to the requirements of the establishment for a succession of fruit.

Plants growing in hot-water-heated pits over tanks or manure-heated beds for bottom heat, which were stopped at the second rough leaf, have made some laterals, and four of these should be trained over the surface of the bed, stopping them when they have made about 18 inches to 2 feet of growth according to the space. This will result in the production of sub-laterals or bearing shoots. These will generally show fruit blossoms at the second or third joint, and when two or three on a plant are open simultaneously they should be impregnated, stopped at one joint beyond the fruit, after which, with the necessary stopping and thinning of the shoots, the plants may be allowed to fill the allotted space. Fertilisation should be performed on fine days when the pollen is dry, and maintain, as far as practicable, a rather dry atmosphere whilst the plants are in that stage of growth and until the fruit is set.

Keep a sharp look out for predatory pests, as cockroaches and crickets, these being best destroyed by phosphor paste spread on pieces of paper, or laid on pellets on slates, remembering that it is poisonous. Slugs are surest attracted by brewers' grains or bran, or they may be searched for at night with a lantern. Woodlice may be captured wholesale by placing two pieces of old board one on the other, with just sufficient space between them for admitting the woodlice, a little oatmeal sprinkled on the lower board being an attraction, or the Mangold Wurtzel traps figured on page 186, March 2nd, issue of the *Journal of Horticulture*, may be used with great advantage, as these pests do irreparable mischief in a short time when allowed to have their own way.

**Cucumbers.**—Winter-fruiting plants are now making growth freely, and require frequent attention in stopping, thinning, and tying the shoots. All decayed portions of wood and foliage must be removed, also the old wood where practicable to make room for young growth to maintain a succession of fruits, securing the shoots to the trellis, and stopping them one or two joints beyond the show of fruit where there is space, otherwise stop at the fruit. To encourage a free growth of young wood, take off an inch or a little more of the soil from the surface of the bed, and give a dressing of that depth of light turfy loam two parts, and one part of lumpy decomposed manure, and a 9-inch potful of fine charcoal to about three bushels of the mixture. Fresh roots will be freely emitted and push rapidly into the new compost. Then copious supplies of liquid manure in a tepid state may be given as circumstances require, and a sprinkling of the following mixture occasionally on the surface will keep the plants in bearing some time longer—superphosphate, 3 lbs.; powdered saltpetre, 2 lbs.; powdered gypsum, 1 lb.; mix, and apply at the rate of 2 ozs. per square yard.

Add more soil to the hillocks of young plants as the roots protrude through the soil, taking care to have it warm and moderately moist. The night temperature should be maintained at 65° to 70°, and 70° to 75° by day from fire heat, with an advance of 10° to 15° with sun, closing soon after midday so as to run up to 90° to 100°, with abundance of atmospheric moisture. Keep the bottom heat steady at 80°, never less than 70° nor higher than 90°.

#### KITCHEN GARDEN.

**Old Tomato Plants.**—Whether plants recently cleared of fruit shall be any longer reserved, or not, ought to depend upon circumstances. Those in pots may well be thrown away, especially if there are some newly raised plants fit to take their place. If, however, they are fairly clean and have not been recently cleared of young growths some of them would be handy for producing early spring crops. Set them along the front of a low forcing house, give a soaking with liquid manure and a rich loamy top-dressing, more of the latter being added as the roots spread into it, till eventually the pots be quite buried in soil. Thin out the young growths and train irregularly or so as to thinly and quickly cover the roof. Any plants that were previously fruited up the roof may be similarly treated. It is a mistake to starve these old plants, and the least that can be done is to give them an occasional surfacing of artificial manure. Take an early opportunity of cutting off and burning any old insect-infested or diseased leaves. A moderate dry heat and a gentle circulation of air that will be found the best preventives of disease. If the white fly is on the plants paint the hot-water pipes with sulphur mixed with either milk or linseed oil. This should be done before the flowers are opening. In order to be certain of a good set of



fruit go over the plants daily when in flower, and smartly tap all the bunches with a light Hazel stick.

**Newly-raised Tomatoes.**—Plants raised in January should now be growing strongly, and if not already done ought to be potted, placing the plants either singly in the centre of 5-inch pots or in pairs near to the sides of 6-inch pots. Use a light loamy compost well warmed through by means of heated bricks buried in the heap, and clean, lightly drained pots. Select the strongest of the plants, and bury these in the soil well up to the seed leaves, making the soil moderately firm. Keep the plants in a brisk heat, water very sparingly at first, and shade from strong sunshine. Directly they commence to root strongly expose them to the light and sunshine, a shelf near the glass being a good position for them. From the middle to the end of March is quite soon enough to sow seed with a view to obtaining good plants for fruiting, either in cool houses or against open walls.

**Brussels Sprouts.**—If a mild hotbed, covered with either a glazed or rough frame, can be spared for raising plants of these that method is to be preferred. Failing this, sow thinly in either pans or boxes, and place in gentle heat or on a greenhouse shelf to germinate. Seeing that the plants must have a rather long period of growth, they ought not to be planted in succession to early Potatoes, the better plan being to dispose the rows of the latter 42 inches apart, and after they are moulded up plant Brussels Sprouts midway between them.

**Early Broccoli.**—With the last named may well be sown some seed of Veitch's Autumn Protecting, and any other favourite early Broccoli other than Snow's Winter White, May being quite soon enough for sowing the latter variety, the plants being duly pricked out on a sheltered border, and otherwise treated similarly to Brussels Sprouts; these also can eventually be planted between widely disposed rows of short-topped early and second early Potatoes.

**Autumn Cauliflower.**—As a rule all that is necessary is to sow seed of Eclipse and Early Giant with the Brussels Sprouts, and if similarly well treated fine hearts ought to be available towards the end of August. Eclipse may be briefly described as a good early form of Autumn Giant, and if a good breadth of both are planted the supply will most probably hold out till the earliest Broccoli are available. Those who cannot afford space under glass for raising these Cauliflowers should sow on a warm border, protecting the seed and the young plants for a time with strawy litter. The same plan may also be adopted with satisfactory results in the case of Brussels Sprouts and early Broccoli.

**Lettuce.**—Early Paris Market and Golden Queen Cabbage Lettuces are the quickest to attain a serviceable size, and more seed of one or both of them ought to be sown either under glass or on a warm border. Any plants not required for frame culture to be hardened off, and then dibbled out on a warm border, where they should, if possible, be roughly protected for a time. Also sow seed of White Paris or other Cos variety under glass, and a pinch in the open.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### THE EFFECT OF THE WINTER ON BEES.

I AM now receiving information from different sources how bees have wintered. In every case where they have been kept in narrow hives they are all living and healthy. Not so, however, with those of the "combination" type; at least 30 per cent. in them are dead. This speaks volumes for our mode of management. One of the persons I have been in communication with, says—"I mean to try the two queens in the one hive system. I must have been foolish not to have observed your instructions sent with hives for that purpose by you twenty years ago."

#### SEVERAL QUEENS IN A SWARM.

Frequently during the swarming season several queens accompany the swarm, which prevents it settling, when the bees leave and are lost, especially when the apiarist is engaged with one or more swarms. To prevent the loss, immediately the swarm is settled in the new hive put a piece of queen-excluder zinc over the entrance or in lieu of the sliding mouthpiece, letting it remain for two days after hiving.

#### RENEWING COMBS.

It is the usual custom to take the combs of old stocks three weeks after the issue of the first swarm. This is not only a good practice to guard against foul brood, but bees are more healthy and breed better in new combs than old ones, while the honey is always uncontaminated with the bad odour consequent in old combs. That fact, however, is contrary to some of our modern bee-keepers. Still, the practice cannot be carried too far. With a young queen old combs are of little value, because generally the bees build them quicker than the requirements of the queen. It is different with a laying queen of a strong swarm. It is an advantage to have a few combs ready for her to deposit eggs when newly hived; but it must be remembered that I differ entirely from what

"W. B. C." in the "Record" said, that queens were at their best when three months old. Queens are at their best in a few days after mating. For queens to be at their best about October, is what no bee-keeper ever saw or desired.

#### BEST HONEY GATHERERS.

"Ligurian" wishes to know which are the best bees for profit. Those most condemned by scientists have been with us the very best, to wit, crossed Syrians and crossed Punics; in fact the crosses of every imported breed are superior to any pure race. The pure Punics with us have never had a chance, the seasons for several years past being so unpropitious for honey gathering; but as workers they excel all other varieties of a pure race. Carniolans seem to be equally industrious when of the pure breed, and their mildness of temper render veils unnecessary.

Unfortunately these, as well as the Italian Alp bees imported from Italy, are often a mixture of blood with other races, consequently their native properties are unknown to the majority of the present day bee-keepers. Having kept these two breeds—the one for upwards of thirty years, and the other for nearly twenty—it will be observed I speak advisedly. At the time of their importation puffing dealers were unknown in the bee world, and beautiful banded crosses and yellow Carniolans were unheard of until dealerism and journalism became combined.

I have had several questions from correspondents asking for the best bees for some fanciful hive. I have answered them by post to the effect that if the querists are inclined to ignore my advice and use hives of which I do not approve, I would rather they would abide by the interested dealer's advice on management than adopt as mine, and take the consequences.—A LANARKSHIRE BEE KEEPER.



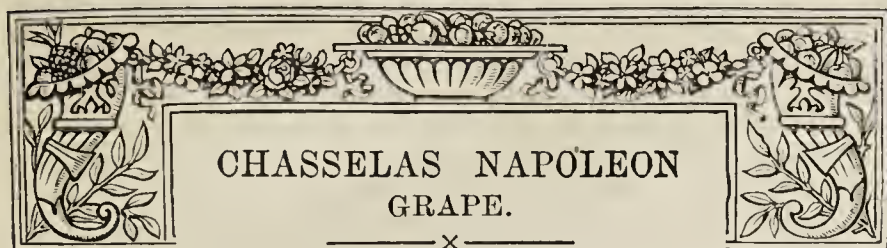
\* \* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Insects (M. F.).**—The larger insect you enclose is the too abundant infester of our kitchens, the common cockroach, which is known to take excursions sometimes, and quarter itself in hothouses. It may be captured by a beetle trap baited with beer or syrup, also poisoned by means of phosphorus paste. The smaller and numerous insects belong to the springtail group. It is a species of Tomenturus. They often resort to manure, and run or leap with great rapidity. No doubt they will, if they have the opportunity, eat the soft portions of roots, and also bulbs or tubers. No very effective mode of dealing with them is known. Soot and lime have been recommended as applications, and the insects would be killed by the application of petroleum, suitably diluted, when they can be reached. Possibly a compound of sulphur and soap in the form of a wash would be of use, where the insects injure the crowns or stems of plants.

**Growing Mushrooms (H. O. B.).**—Many persons beside yourself "want to grow Mushrooms," and several have grown them with a manure supply even less than your own. A few days after the bed is spawned it must be cased with soil, and the better the loam is the finer will be the Mushrooms, assuming the spawn runs well. Litter covering is only needed at this season to prevent the soil drying, and this is important. The soil being moist, the litter if used dry, as it may be, will soon be a little damp, and it should not remain long enough unmoved to cling closely to the soil. For sweetening the manure spread it out thinly to prevent over-heating and the necessity for turning "every other day or two." A little mouldiness will do no harm. Spread at once in thin layers in the bed, then when rather dry pressed down, has in many cases answered admirably. Good crops of Mushrooms have been obtained when the manure has been mixed with moss litter used in stables, excessive wetness being avoided. This is quite as inimical as overdryness of the material. The right condition must be determined by individual judgment, and we do not know that it can be explained more clearly than it is in the work you have—"Mushrooms for the Million."





AN advertisement has been sent to us in which the "new white Grape—Chasselas Napoleon"—is offered for sale by the highly respectable firm of Messrs. W. Cutbush & Son. The whole stock is said to have been acquired from the raiser, Mr. G. Reynolds of Gunnersbury Park Gardens, the statement being made in undoubted good faith.

On page 199 of our issue of the 9th inst., Mr. D. Thomson of Drumlanrig states that he has known a Grape under the same name for thirty years answering exactly to the description conveyed in the advertisement. We are requested to look into the subject on the ground that it is a serious matter to purchase a new Grape that may eventually prove to be an old one. The matter is undoubtedly serious, and the more so if the Grape from which so much is hoped prove disappointing. We propose, therefore, as in duty bound, to tell the vendors and the public something of what we know of the Grape that has been grown for eighty years, and probably much longer, as the Chasselas Napoleon. It is, as its name implies, a French Grape, and one of the finest when seen in the form of full bunches of large berries, which is rare, while full crops of such bunches are rarer still.

The true name of the Grape is "Panse Jaune," which we may add in plain English means "Yellow Belly." Expressive but not elegant this name may be thought, and it is possible that the French preferred the more euphonious alternative Chasselas Napoleon. Under this name the Grape has been long grown, both in France and England, but not very extensively because of drawbacks in two important respects—namely, the Vine being an uncertain (generally a shy) bearer and a bad setter.

The following description of Panse Jaune (Chasselas Napoleon) was taken from a Vine and its fruit in the Chiswick collection thirty years ago :—

When the bunches are well set they are large and handsome, long, tapering, and shouldered. Berries very large, oblong, and like those of Muscat of Alexandria in appearance. Skin tough and membranous, adhering to the flesh, of an amber colour, and covered with a thin grey bloom. Flesh firm, sweet, but not richly flavoured. It is very rarely that this Grape sets its bunches perfectly. The condition in which it is usually met with is very few bunches on the Vine, and these so badly set that there are only a few fully developed berries on each bunch. The leaves die pale brown.

We are able to add, as corroborative evidence of the accuracy of the above description, the testimony of one of the greatest French authorities on Vines. In 1854, Comte Odart published the third edition of his *Ampélographie Universelle*, a report of the Vines grown in French and foreign vineyards. The distinguished author describes the fruit as large, oval, pale amber, vinous, but not rich, and goes on to say that sometimes a Vine produces only one or two fine bunches, and a common feature is to find two or three large berries and the majority the size of hempseed. The Comte further states that he had grown the variety for forty years, and that he had found by experiments that the Vine gave the worst results on its own roots, better returns on the Muscat stock, and better still when grafted on the White Frontignan. He recommends "long pruning" as the best method of securing bunches, but is emphatic in describing it as what we term a "bad setter." We have thus clear evidence that the variety is a very old one, and it is probably one of the oldest of French Grapes.

The question now arises as to whether the "new" variety offered is distinct from the genuine Chasselas Napoleon. The descriptions in the advertisement by different writers agree in the "Chasselas Napoleon," exhibited by Mr. Reynolds in 1891, having large oval Muscat-like berries, but paler, and of refreshing (not Muscat) flavour. Those characteristics clearly pertain to this Grape, but the Gunnersbury bunches were described as large and compact, and it is stated in one paper that the bunch was cut from a Vine worked upon a Muscat.

Now, it is of course possible that Mr. Reynolds may have raised the variety from seed at some time and somewhere, then established it on the Muscat, and it is possible that a new seedling may be similar to an ancient variety; but the public is entitled to have definite information on the point, also to know why an English gardener should give a French name to his seedling, and especially when the description of the fruit agrees so exactly with that of the long established French Chasselas Napoleon that was, as we have said, grown and fruited at Chiswick thirty years ago?

It is of course true that the Vines offered for sale were obtained from the "raiser" of them. He would naturally raise them from eyes, but we are without clear evidence respecting the origin of the Vine from which the fruit of Chasselas Napoleon was cut that was exhibited in a collection at the meeting of the Royal Horticultural Society on October 27th, 1891, and certificated. Before such an award was made a discussion should have ensued respecting both the distinctness of the Grape as an English seedling and its claim to an old French name.

In connection with this subject of nomenclature we have been asked to explain the meaning of the term "Chasselas," and, so far as we know, it is here given for the first time. "Chasselas" is the French name for an eating Grape well known in that country. The French dictionaries do not explain the derivation of the word, but the root of it seems to be in Casale, Chasal, Chazale, Chazalis, and Chastel. The meaning underlying all these is that of castle, manor house, or mansion. The most plausible explanation, therefore, of the word is "lord of the manor's or the castle Grape." Perhaps the original was first cultivated by the monks in the abbeys and priories, and hence extended to the houses of the feudal lords, where only such a garden luxury was likely to be found in these days when most of the country was uncultivated and unenclosed. This derivation is borne out by the German equivalent "Gutedel," which means "the noble estate" or manor.

In all probability the Panse Jaune, subsequently Chasselas Napoleon, is one of the ancient Grapes of France, a variety not commonly grown in vineyards because of its shy bearing and bad setting peculiarities, but was practically, because of its fine appearance, retained in the gardens of the nobles for the purpose of having a fine bunch now and then as something of a novelty on their tables.

In the old days artificial fertilisation was not resorted to, nor was it in the Chiswick trials above referred to, or possibly the few bunches might have been better furnished with large berries, in the same way as those of Alnwick Seedling are improved. In the *Journal of Horticulture* (October 29th, 1891, page 372) it is stated that a first-class certificate was awarded for the Gunnersbury bunch of Chasselas Napoleon, "as it was in extremely fine condition." This was clearly intended to indicate that this was unusual in the old Grape that was in the mind of our reporter, and he made no reference whatever to the bunch exhibited being a new variety. He was evidently under the impression that the bunch was generally understood to represent the old French Grape in exceptionally good form. (The *Gardeners' Chronicle* clearly described the Grape exhibited as a "French variety," October 31st, 1891, page 528). The Committee are entitled to award the high honour of a first-class certificate to old varieties distinct in character and of proved usefulness, but for a Grape seen for the first time in



good condition by the majority of the members it cannot be denied that a cultural commendation, or at the most an award of merit, would be much more appropriate. Very great care indeed should be exercised in awarding a first-class certificate to either a variety of Grape or any other fruit. This award leads to the varieties being purchased at special prices, and after such Vines or trees have occupied valuable space for a long time keen disappointment is experienced if the crops are unsatisfactory, and the reputations of vendors, however genuine their action, are impaired.

As is well known admirably furnished bunches of essentially bad setting varieties of Grapes are occasionally seen, and their condition is suggestive of a new or improved variety. When the Morocco Grape was grown well by the gardener at Horsforth Hall, Leeds, it was regarded as a new variety, and called Horsforth Seedling; also, when the same Grape was similarly well grown by the gardener at Kempsey House, Worcester, it was again regarded as new, and extensively sold as Kempsey Alicante, to the grievous disappointment of numbers of persons when it proved to be the old Morocco, one of the worst setters known, and consequently this otherwise good Grape is rarely seen in vineries. But to return to the Chasselas Napoleon. It is necessary, both in the interests of vendors and purchasers, to say that this French Grape as a rule produces bunches less freely and sets its berries as sparsely as the Morocco; and but for these constitutional drawbacks it would have been more extensively grown both in France and England long ago. Mr. William Thomson of Clovenfords has grown the Chasselas Napoleon, which he, presumably, obtained from a former pupil of his, Mr. H. Knight, who grew it at Pontchartrain, France, and who is now gardener to the King of the Belgians at Laeken. We do not know whether it is in the Clovenfords collection. It is not included by Mr. Barron as worthy of cultivation in his work on the Vine.

We suspect there has been some mistake or misunderstanding in reference to the so-called "new" Chasselas Napoleon. This name cannot be properly given to an English seedling, and it cannot be otherwise than advantageous to Mr. Reynolds to exhibit any seedling Grape that he raises under an English name. If he has free cropping Vines of a variety with berries equal in size and quality to the old French Grape named, and at the same time the berries set as freely as Alicantes, without artificial fertilisation, such a variety will be an acquisition, but the true Chasselas Napoleon is not. In dwelling on this subject that has been brought to our notice we have in view the interests of both the public and vendors of Grapes. Any variety that is distinct and good we shall cordially welcome, but the confusion in nomenclature that we have pointed out cannot be otherwise than disadvantageous to all concerned, and it will be admitted that any mistake or accident that may have occurred cannot be rectified too soon to satisfy the Grape-growing community.

### HARDY FLOWER NOTES.

THE customary furious winds of March and its storms of falling snow and dashing rains seem to take delight in tossing and destroying the sweetest and purest of flowers, and in seeking to render as fleeting as possible the pleasures of the garden. But no storms, however wild—no cold, however intense—can hold for ever in check these flowers, which have now rebelled against their long season of rest, and are now mustering their forces to overcome the tyranny of the month.

The Snowdrop, which was among the first to throw off the thralldom of winter, has now a goodly company of supporters. The Crocus, with its golden or white or purple or lavender cups, in sheltered spots proclaims the freedom of the flowers. The Winter Aconite has long preceded it, and well deserves the lines applied to it by the poet:—

"The Aconite that decks with gold  
Its little merry face."

The Chionodoxas, too, are throwing out their flowers from among their fresh green leaves, while their kindred among the Scillas begin to show their blossoms of purple-blue.

Some of the Saxifrages are also making a brave show. *S. luteo-purpurea* is covered with its flowers of pure and lively yellow; *S. Burseriana* and the major form are still in beauty, and the varieties of *S. oppositifolia* are now forming carpets of colour, here of purple, with the typical species; there of pure white, with *S. o. alba*; and there, again, of bright crimson purple, with *S. o. splendens*. Nor does the Pyrenean species or variety (which it is hard to say), *S. pyrenaica*, want its beauty, for *S. p. superba* is now showing its large, bright, deep-coloured flowers.

Primroses, too, are hastening on, and even now some are in beauty, the yellow varieties harmonising well with the white of the Snowdrop and the blue of *Anemone blanda*, which has opened its blossoms also. Nestling under the shelter of a wall, but overhanging a stone in a graceful way, is a good plant of a light, "true flesh-coloured" variety of *Erica carnea*, which is full of beauty, while the white variety previously spoken of is still in flower. The *Leucoium*, too, or Snowflake, has come to rival and succeed the Snowdrop, and its varieties, with their pure white flowers, spotted with green or with yellow, will give pleasure to those who own them.

The Daffodils are dallying long, and as yet only the dainty little *minimus*, with me always the first to flower, has come into bloom; others, however, are full of buds, and promise a rich season of beauty ere long. *Sisyrinchium grandiflorum*, growing near the base of a partially shaded rockery, is now most beautiful with its grassy leaves and its fine bells of purple, or of the white of the variety *album*. Why is it that such a name as "Swine's Snout" has been attached to such an exquisite flower? If we cannot thus agree that such a name should be a fitting one for the *Sisyrinchium*, whose Latin name is a puzzle to many, what more can we think of the name of "Sow-bread," as applied to the *Cyclamen*, now decorating the garden with its pretty leaves and beautiful flowers? I fancy even the most zealous advocate of English names for flowers will admit that the choice has not been a happy one. Here we might well adopt the alternative of "Bleeding Nun," another name of the *Cyclamen*. It is at least as good as "Sow-bread," and more euphonious. Distinct in colour from anything else at present in flower is *Bulbocodium vernum*, with its bright purple flowers. Cheap as is this flower, its comparative absence from gardens is a matter of surprise. Those, too, who like variety in foliage as well as in flower would do well to consider the claims of the variegated leaved form, which, when the flowers are passed, will form an object of interest with its striped leaves.

How hard seems the fate of that sturdy flower *Primula cashmeriana*, which from time to time throughout the winter has essayed to rear its globular heads of flowers only to have them blasted by some sharp frost. But it is still undaunted, and now a number of heads are covered with their bright purple flowers densely packed together.

Here and there, too, are clumps and plants of *Hepaticas* of various colours and shades, and it was pleasant to read Mr. H. Dunkin's appreciative notice of these plants in a recent number of the Journal. There are few flowers brighter or more beautiful at present; and, severe as has been the season, some of my plants have rarely been without a flower. A writer has praised *H. angulosa* as an earlier bloomer than the others, but I cannot say that I agree with his remarks. The blooming of *Hepaticas* is very much a matter of position, and here (Dumfries) the varieties of *H. triloba* come into flower rather earlier than do either *H. angulosa* or *H. angulosa major*. The *Hepaticas* have not yet recovered from the many years of neglect they have received from the flower-loving public, and it is somewhat tantalising to read some of our old gardening works and have to lament that many varieties are not now to be had. In a few years, however, this will be largely altered; and while on one hand we have lost some *Hepaticas*, it must always be remembered that others are in cultivation of which our ancestors knew nothing. I have at present several varieties under observation, and much interesting correspondence on the subject of some of these old flowers has brought to my knowledge other varieties of which I hope to speak at some future time.

Another flower to which I may briefly refer as at present in flower is *Soldanella alpina*. Very beautiful this is, with its thick round green leaves and pendent bell-shaped purple flowers, beautifully fringed. No choicer plant for the rockery can well be conceived, so neat is it with its compact habit. It has, however, a fault, and that is it is difficult to flower in many gardens. I have struggled with it for some years, and after many failures have at last succeeded by adopting a recommendation given, I think, by Rev. H. Ewbank in a contemporary. This was to cover it in winter with a sheet of glass fixed a few inches above the plant. I covered mine in October, and the glass will be removed at the end of this month. The result is a fine display of flower.



This plant is growing in sandy peat and grit at the base of a rockery, where it receives a good supply of moisture in summer. This *Soldanella* has received the name of the "Blue Moonwort"—a name which shows the inconveniences of some of our "popular" names. When we find the name "Moonwort" applied to a Fern, to *Lunaria biennis* (the Honesty of our gardens), and to this pretty *Soldanella*, it must be admitted that such a system, or want of system, has its inconveniences. A patent example of these is found by the fact that in a series of articles on "Flowers and Flower Lore," which appeared in a London magazine in 1879, the superstition that the Moonwort possessed the wonderful powers of unshoeing horses and opening locks was applied to the Honesty instead of the Fern.

The sight of the beautiful little *Houstonia* coming into flower on the rockery reminds one of how frequently this neat plant is lost from want of knowledge of one simple requirement, which is by no means only recently discovered, having been known more than sixty years ago. This is simple enough, consisting in cutting all the blooms off the plant two or three times in the course of the season. It sometimes requires a little self-denial to do so, but the loss of the flowers for a short time is well repaid by the increase of the plant, while without this precaution it would inevitably perish. *Houstonia coerulea*, which is a native of North America, was introduced in 1785, and was named in honour of Dr. Houston, who resided for several years in the West Indies. It grows to only some 4 or 5 inches in height here, and proves quite hardy on a rockery facing the south in a pocket filled with sandy peat and grit. In the United States it is known by several popular names, among these being "Bluets," which is the one most familiar in Britain. "Innocence," "Dwarf Pink," "Star of Bethlehem," and "Forget-me-not" are likewise applied to it. The typical species can only be called blue by a stretch of the imagination, and is, curiously enough, less plentiful than the white variety, *H. coerulea alba*, which is, however, extremely pretty, and may well be included in a choice collection, covering itself profusely with its small and elegant flowers.—S. ARNOTT.

### OLEANDERS IN SMALL POTS.

THERE are some gardens in which Oleanders are well grown, but there are many others where they present a sorry figure, receiving but scant attention, blooming indifferently, or not at all. Such plants are neither useful nor ornamental, and can furnish but very little pleasure. Oleanders are, to my mind, much more ornamental and useful in small than in large pots. In the latter instance, except under good management, they grow tall and become leafless on the lower portion of their stems, which necessitates their being stood where their bare branches can be hidden by other plants, often to the serious disadvantage of those under notice. Cuttings are so easily rooted that there should be no difficulty in keeping up a stock of young plants. In small pots they would not attain to such length in stem as to make them objectionable and unsightly, and would not be stood in out of the way corners where they have no chance to mature their growths, without which it is useless to expect a full and perfect blossom on plants in large or small pots.

In a Hampshire garden of which I had charge some years since these plants were highly valued, and no difficulty was experienced or trouble spared in obtaining abundance of flowers in their season from plants in pots ranging from 4 inches to 8 inches in diameter. A few cuttings were inserted each autumn, choosing tops that were matured, and furnished with a bloom truss in the extreme point. They are best rooted in a sandy compost, but they answer in wide-necked bottles filled with water, and stood near the pipes in a warm house. In the latter case they ought to be potted as soon as the roots are about an inch in length. When rooted quickly the flower spikes usually develop in the early summer months, and for conservatory decoration such small plants are particularly effective. By the next autumn three lateral shoots will have formed, which if they receive liberal attention in the matter of watering and other details will perfect the same number of flower trusses for a subsequent display. When well rooted they should be transferred from the 4-inch to 6-inch pots, and in these they may be allowed to remain over the second season. In 6-inch pots the plants in our case were so top-heavy with the weight of the flower clusters that they had to be supported with temporary stakes, or by strings attached to the roof-trellis to keep them erect. One more shift were given them—namely, into 8-inch pots, and after doing good service in these they were thrown away, younger ones taking their places.

In some cases young shoots spring up from the base of the original stem, which was taken advantage of in reducing the height

of the plant by cutting it down and giving the sucker growths full play. The flowering tops of the stem cut down furnished the needful supply of cuttings for successional plants without in any way interfering with others retained unpruned. From such practice we were seldom without flowers the whole summer, and instead of being kept rigidly staked the points of the shoots were allowed to assume their natural pendent character brought about by the weight of their own blooms and buds, which on a stage displayed their beauty to the fullest degree.

They were always kept in the greenhouse, this being furnished with roller blinds for giving the requisite shade. They often require water, especially when in small pots, during the summer months. When the pots are full of roots chemical manures may be employed for sprinkling on the surface of the soil.

Turfy loam, enriched with decayed manure and leaf mould, with a sprinkling of dry fish manure added, formed the potting compost. After the pots were filled with roots they were kept standing in saucers of water throughout the summer.—W. STRUGNELL, *Rood Ashton Gardens*.

### DISCUSSION ON PEACHES.

#### ALEXANDER PEACH BUDS DROPPING.

IT is a surprise to me to learn from various sources that Early Alexander is a bad one to force. Our early house is always started at the end of November, and I have never been troubled with buds dropping; the set is also good. I have some trees now well laden with fruit, which is stoning. So highly do I think of this Peach for early work that I would plant no other variety. It is six weeks before Royal George and Darwin Nectarine, and a month before Early York in ripening in the same house. Planted with a house to itself would mean a considerable difference in the coal and labour bill, as a month's firing and labour would be saved, and ripe fruit obtained at the same time as other varieties started a month earlier. We have Early Alexander and Waterloo obtained from two eminent firms about five years ago; but I fail to see any difference between the two, either in wood, flower, foliage, or fruit.—S. T. WRIGHT.

WITH me this variety drops its buds much too freely when growing in a cool Peach house; but out of doors, established at the foot of a south wall, the bud-dropping is unknown. In the open it is a wonderfully free bearer. I took last year five dozen fruits from a tree but two years planted. In spite of this heavy crop of fruit, the growth last season was very free; the promise of a full fruit crop this year is equally good. This Peach appears to be constitutionally weak for growing under glass; but where it is exposed at all times to the open air no trouble is experienced in retaining its flower buds.—E. M.

I HAVE been watching the columns of the *Journal of Horticulture* ever since Mr. Crump first brought the subject up (more than twelve months ago) of the Alexander Peach dropping its buds, for some of your able correspondents to solve the question; but up to the present no one seemed to have given a definite answer. Here I have three trees that have been planted about five years, which drop their buds every year. Two years ago I lifted and root-pruned them, to see if that would make any difference; but no, all the best and most promising buds drop just as they begin to swell. There are a few stray buds left on the terminals and spurs, but not sufficient for half a crop.

I had come to the conclusion that my trees did not get sufficient sun to mature the wood, as the house they are planted in is facing east, so that the sun is gone before midday. As I hear of other gardeners that grow the Alexander Peach under more favourable conditions losing the buds, I have come to a wrong conclusion. In the same house I have sixteen trees of the following varieties:—Hale's Early, Noblesse, Early Beatrice, Princess of Wales, Violette Hâtive, Bellegarde, Barrington, Grosse Mignonne, and Walburton Admirable Peaches; also Pineapple and Elruge Nectarines. None of these drop their buds to any extent, and they all have the same treatment. In my opinion Alexander will have to get different treatment from what other Peaches do before it can be successfully grown.

I greatly favour Mr. Chinnery's idea (page 198), March 9th. Instead of disbudding pinch the growths, so as to form spurs. Perhaps some of your readers have tried the plan already; if so, I hope they will give us their experience.—G. FOSTER, *Glendaragh Gardens, Teignmouth*.

### NOTEWORTHY OBJECTS AT KEW.

#### SARACA INDICA.

THE most striking object in the way of flowering plants in the Palm house is a fine specimen of this leguminous tree about 15 feet in height. Unfortunately this plant can be grown satisfactorily only in large structures on account of the size it attains, otherwise it would no doubt ere this have become a popular inmate of our stoves. The heads of rich orange-coloured flowers are borne on very short peduncles along the stems of the branches. In general appearance they bear a close resemblance to an *Ixora*. The foliage is pinnate, glabrous above and slightly glaucous beneath. This species is a native of India and Java,



and was introduced to cultivation about 1796. It is figured in the "Botanical Magazine," t. 3018, under the name of *Jonesia asoca*.

#### CHRISTMAS ROSES.

Quite the best thing in the grounds during the past month has been a large clump, several yards square, of *Helleborus niger* in the wild garden near the Cumberland Gate. This was planted about two years ago, and has not been disturbed in any way since. This system of naturalisation might with advantage be practised much more extensively, not only in our parks and public gardens, but also in private places. Several of our hardy spring flowers besides *Hellebores* lend themselves readily to such treatment, and many unsightly corners might be beautified by their use.

A large number of named species and varieties of *Hellebores* are grown in the rock garden, and the finer sorts are also utilised to a considerable extent as pot plants for the decoration of the alpine house, which by the way is now beginning to look quite gay and will soon be at its best.

#### BROMELIADS.

Our neighbours on the continent show a keener appreciation of the merits of Bromeliads than we do. It is surprising that these charming plants should gain favour so slowly with us. It cannot be because of difficulties in their cultivation, for no exotics are more easily managed; nor can it be from a lack of beauty in the flowers, for no class of plants, Orchids not excepted, can surpass them in their richness and delicacy of colouring and in the harmonious blending of the various tints of the bracts and flowers. The majority of the plants can scarcely be called decorative, but their deficiencies in this respect are fairly atoned for by their magnificence when in flower.

The collection of Bromeliads at Kew is probably the finest in the kingdom. It occupies nearly the whole of the staging in the Victoria House and one of the stages in the stove, and numbers somewhere about 160 species. At most seasons of the year a fair number of these are in flower. The most noticeable at the present time are *Æchmea cœrulescens*, with small red flowers in an erect panicle; *Æ. glomerata*, flower bracts bright red, flowers reddish lilac; *Billbergia Breautiana*, bright red bracts, deep violet-blue flowers; *B. pyramidalis bicolor*, violet flowers and bright red bracts; *B. thyrsoidea longifolia*, bracts bright red, flowers red with purple tips; *Dyckia frigida*, golden yellow flowers in a panicle about 1 foot long; *Tillandsia microxiphion*, a very dwarf plant, not more than 3 to 4 inches high, with rosy pink bracts and violet flowers. Two plants of *Bromelia fastuosa* are fruiting, bearing huge erect panicles of large, yellow, egg-shaped berries about 1½ inch in length.

#### CALLIANDRA TWEEDIEI.

Although it has been in cultivation for over fifty years, this elegant stove shrub does not appear to be very well known. It is deserving of a greater popularity, for it is handsome alike in foliage and flower. It belongs to the natural order Leguminosæ, tribe Mimosæ, and bears a considerable resemblance to the *Mimosas*. It is of a compact, shrubby habit, and attains a height of about 3 feet. The bi-pinnate leaves, in a young state, are of a delicate light green colour, which is very pleasing and forms a fine contrast to the bright red of the flowers. The latter appear in early spring, and are borne in compact globose heads of about twenty flowers. The beauty of the flower lies entirely in the numerous bristling stamens, with their very long red filaments, and the name, *Calliandra* (beautiful stamen), is very appropriate. It was introduced from South Brazil about 1840, and is figured in the "Botanical Magazine" for 1845. A plant is now flowering in the Palm house.

#### HIBBERTIA DENTATA.

The greenhouse does not present much of attraction in the way of climbers at the present season, but a fine specimen of this *Hibbertia* is worthy of a passing notice. The rich yellow flowers about 2 inches in diameter are freely produced, and show up well against the dark bronzy foliage. *H. dentata* is the best known of the *Hibbertias*, and is worthy of a place in every greenhouse for its foliage alone. It lacks the disagreeable odour which most of the other species possess. It is an old garden plant, having been in cultivation since 1814. A good figure of it is given in the "Botanical Magazine."—A. B.

#### FRUIT PROSPECTS.

NEARLY every fruit tree gives promise of a heavy crop; in fact, our trees here are exceptionally full of bud. Still, it makes us nervous to see the buds coming on so rapidly. Apricots are in full bloom, so are some of the Peaches. Brockworth Park Pear has opened some of its blooms, and other varieties are ready to expand. Plums are ready to burst open, and many Apples are showing the colour of their petals. That grand Apple Lane's Prince Albert is scarcely on the move, and the same may be said of Bramley's Seedling. This lateness is a valuable feature in both varieties, as it makes the crop far more certain.

I commenced spraying on March 7th with Paris green, 1 oz. to 20 gallons of water. On that date I discovered the first larva of the winter moth (which is about three weeks earlier than previous years), and on March 8th I found a female winter moth on the trees. This opens up an important question as to how long the hatching process may go on. Unless I am mistaken the caterpillar plague will be severe this spring, as there are more eggs on fruit trees than usual. *Psylla Mali* will also be strongly to the fore. So far the March moth has not

appeared here. Fruit growers will have to make up their minds to fight insect pests manfully in the west of England if they desire good crops, otherwise the enemy will work serious damage.—S. T. WRIGHT, *Glewston Court Gardens*.

It is most pleasing to note such an abundant promise of a fruit crop. It is not one kind of fruit that gives such a splendid display of flower buds, but all are alike in this neighbourhood. No doubt the comparatively dry weather experienced during August and September of last year is partly accountable for the maturity of the wood and fruit buds. It is generally considered that where Apple trees bear an unusually heavy crop of fruit one year the same trees give promise of but a thin one the following. In our case it is not so this season; trees of many kinds that gave exceptionally heavy crops last year are now literally smothered with buds.

Trees planted but two years, irrespective of variety, give promise of more fruit than will be good for them if we escape the usual spring frosts. Here the flower buds are severely thinned on these recently planted trees. I find the practice is well worthy of the time spent; it does not take long to remove one half of the flower buds from the trees. I prefer to do this just prior to expansion.

Trees planted last autumn, instead of allowing them to carry fruit during the coming season they would be all the better if the buds were pinched off directly they are large enough to handle. The chances of growth of a superior order will be increased, tending much more toward the future success than crippling the trees by premature cropping.

Peach and Nectarine trees on the open walls I have never seen more promising, many of the former are fully in flower. Gross Mignonne on a southern aspect, and Royal George facing east were the first to open their blooms, even before Alexander and other early kinds growing against a south wall.

Plums of all kinds also show well, and Cherries are no exception. Pears show, by the plump buds and breaking calyx, that they mean to give us plenty of flower. Gooseberry blooms are now (March 16th) fully expanded, and the trees are fairly well clothed with foliage. These are, I fear, much too forward to ensure a full crop.—E. M., *Swanmore*.

#### THE SWANLEY PRIMULAS.

"I HAVE a *Primula* such as you have never seen before. You are an enthusiast about these flowers, come and see it;" thus wrote Mr. Henry Cannell a fortnight ago. An ingenious man is the head of the Home of Flowers. He contrives to arouse curiosity, while leaving no means of gratifying it but a journey to Swanley. This is not what may be termed a florist's *Primula*, but a decorative acquisition. Imagine a plant 18 inches to 2 feet high from the rim of a 5-inch pot, and a foot through, with the true *Primula sinensis* foliage. Recall the flowers of the old *sinensis* if you have seen it, single, about three-quarters of an inch across, and nearly white. Clothe the plants with dense clusters of these flowers, not in single trusses, but japonica-like, whorl above whorl on long brown stems, and you have an idea of *Primula The Lady*, by which name Mr. Cannell gallantly describes his new favourite. For freedom of blooming *obconica* has no place beside it; in loose graceful beauty japonica bears no comparison. It is like a well grown pyramidal *Saxifrage* as we sometimes see that useful plant in parlour windows, but with the difference that it is more flowing—more fleecy so to say, altogether more charming. Does this sound promising? If so it may convey some idea of merits of the new star in the *Primula* firmament, and when it is added that it comes from seed just as freely as a weed, and grows vigorously and healthily, it will perhaps be agreed that the plant is worth thinking about. To compare it with the choice forms is futile. It is of a totally different class, calculated to add brightness to greenhouses, conservatories, and windows by its cheerful profusion and clustering wreaths of blossom.

I should like to add a few words about the *Primulas* proper—the forms of *P. sinensis* which comprise the famous Swanley strain. They are a really grand assortment. What splendid size and substance there is in the flowers, and what perfection of truss, can only be gathered from a visit; but I will say a word or two about some of the best varieties. Kentish Fire is a carmine red, very free flowering. Eynsford Purple is a rich purplish carmine. Pink Queen is a lovely soft pink with a fine truss and pips nearly 2½ inches across. Picotee is a distinct and charming flower, white with pink margin. We are getting Picotee forms of everything; a Rose will be cropping up soon. The more the better, for they are all pleasing variations. Duchess of Fife is a Fern-leaved with a fine truss and pinkish lilac substantial fimbriated flowers 2½ inches in diameter. Future Queen is another Fern-leaved of great beauty. It has a very large, evenly formed truss, pips substantial, fimbriated, and nearly 2½ inches across, pure white. This is one of several magnificent whites. Her Majesty, plain leaved, is nearly as good as Future Queen. White Perfection is another splendid one, having noble heads of beautiful pure white pips. In size, substance, form, and purity it might indeed be styled Perfection, but it is doubtful if it is not eclipsed by another superb variety—Eynsford White, which has recently been raised. It is a little earlier than White Perfection, has a large truss, and immense pips of great solidity, pure white with yellow eye. Cannell's White is another splendid variety. Mary James, clear mauve, is very distinct in colour, and has a good truss. Cannell's Pink is a worthy companion to the White. It has a large truss, pips of great size, and the beautiful colour of a La France Rose. Cannell's Favourite is a rich purplish carmine, and, like Swanley Blue, has other points of



merit. Improvement, crimson, is roteworthy for its good truss, but even more so for its splendid habit. The plants average 15 inches across, and have a most even spread of foliage.

To sum up, the Swanley Primulas are in every respect up to the high standard of the firm. They are not only of the highest quality but are grown in enormous quantities, so that collectively and individually they are equally striking.—VISITOR.

### MILDEW IN VINERIES.

FROM the remarks of "A. D." (page 206) on this subject one would infer that mildew is caused only by the roots being in a bad state. The worst case of mildew in vineries that I ever saw occurred eight years since, owing it was thought to the admission of a supply of air through the front ventilators during the time the Vines were in bloom. The sun was shining daily with considerable power, a cold east wind blowing at the same time, causing quite a draught in the vinery, which was planted mainly with late varieties of Grapes.

By the use of sulphur in the way I indicated on page 206 the disease was checked, and by again painting the stems of the Vines the following year, as well as the hot-water pipes occasionally with sulphur also, the mildew was stamped quite out, and has never been any trouble since, no sign of it being visible. The roots of the Vines have not been interfered with in any way since they were planted fourteen years since, with the exception of adding a thin top-dressing of loam and wood ashes annually.

These facts are, in my opinion, most convincing that the state of the roots has but little, if anything, to do with the attack of mildew with which so many Vines have to contend. Yet "A. D." would have us believe that the main cause is attributable to either deficient root action or that which is too gross.—OBSERVER.

### SPRING BEDDING PROSPECTS.

I FIND that the majority of plants employed for spring bedding have passed through the late trying winter without having received much injury. Although the frosts have not been quite so severe as during the winter of 1891-92, vegetation was without the protection of snow throughout the most severe part of the late winter, and I attribute the present satisfactory condition of the plants to early planting. I have on several occasions proved that it is far better to delay any arrears of planting till March than to complete it in the depth of winter, and have once more been impressed with the soundness of that practice.

Having occasion in December last to remove some Violas, they were planted in a couple of beds a few days after sharp weather set in, and I now find on examining them closely that fully one-third of the plants have succumbed, while among large numbers of others set out early in November I have not noticed a single failure. In dealing with these charming flowers I use a number of two-year-old plants which are planted first, beginning the work at the end of October, then the strongest and best rooted are selected from among the cuttings inserted early in August. Those not strong and well rooted are allowed to remain in the cutting beds (which are in sheltered positions) throughout the winter, and are now being placed in their summer quarters. The soil being in splendid working condition is pressed firmly about the roots, a matter of importance in enabling the plants to withstand the drought of summer.

Our soil being light I find it has a great tendency to shrink from the collars of the plants during the winter; those which were planted in the autumn are therefore looked over now, each plant having the soil pressed firmly around it, and the whole surface of the bed lightly stirred with the hoe. The latter practice cannot be too strongly commended as a means of forwarding all kinds of crops, letting in, as it does, the warmth and sunshine of these spring days, which do so much to incite root action, sweeten and fertilise the soil. If these matters are attended to there are signs of an early and prosperous season for spring bedding plants.—H. DUNKIN.



### DENDROBIUM NOBILE IN SMALL POTS.

THE specimens of the above useful Orchid, brought under notice by Mr. W. Oliver on page 220, are certainly excellent examples of cultivation considering the size of the pots. I cannot boast of anything so good in that specified size, but a note respecting some cultivated here will perhaps be of interest.

Two plants of *D. nobile* in 8 and 8½-inch pots, just finished flowering, have carried respectively 365 and 400 blooms each, all well developed. They have not been disturbed for the last six years. I simply pack them with good peat and charcoal amongst the roots as often as required. I might say they are almost living

on the top of the pots, having a network of roots. As long as they continue to thrive so well I shall certainly leave them alone. They teach a valuable lesson in their cultivation.

Of larger plants, a specimen here in one 12 inches in diameter, is now carrying 620 flowers. Another in a pot 14 inches in diameter has 730 blooms expanding. A larger specimen than the preceding, now showing for bloom, promises to be of the same excellence as the others. The plants are grown in an ordinary stove, then transferred to one of the vineries to ripen along with the Vines. My opinion regarding *D. nobile* is it should be grown fast, not unduly shaded, and have a decided period of rest. One objection against small pots is the plants are difficult to stake without lacerating the roots.—J. J. CRAVEN, *Allerton Priory Gardens, Liverpool.*

### TRICHOGLOTTIS COCHLEARIS.

THIS pretty little Orchid does not seem to be very generally known, judging by its rare appearance, even in large collections. The plant is dwarf in habit, and as shown in the woodcut (fig. 47),



FIG. 47.—TRICHOGLOTTIS COCHLEARIS.

has thick slightly channelled leaves arranged in Vanda-like manner on opposite sides of the stem. The flowers are borne three or four together in small racemes springing from the axils of the upper leaves, and are remarkably pretty. The sepals are lanceolate; the petals are broader and rounder at the upper part, both being pure white barred with bright purple—a charming contrast. The lip is curiously hollowed or scoop-like, terminating beneath in a short conical spur, and the form being somewhat suggestive of a shell has given rise to the specific name adopted. *Trichoglottis cochlearis* is a native of Sumatra, whence it was introduced by Messrs. J. Veitch & Sons a few years ago.

### PHALLO-CALANTHE × SEDENIANA ROSEA.

PHALLO-CALANTHE × *Sedeniana* was raised in the establishment of Messrs. James Veitch & Sons of Chelsea from *Phaius grandifolius* fertilised with the pollen of *Calanthe* × *Veitchii*. It is a beautiful thing with flowers of a shade of pale primrose yellow. It is interesting to note that the reverse hybrid has now been raised by Mr. W. Lambert, gardener to John Riley, Esq., J.P., of Hapton House, near Burnley. In this case, says "The Orchid Review," the hybrid *Calanthe* × *Veitchii* was the seed parent, the pollen being derived from *Phaius grandifolius*. It differs from the original form, however, in having the lip light rose colour, marbled with a somewhat deeper shade, and in having a rosy-red line down the centre of each petal. It may therefore bear the name above



given, in order to distinguish it from the original form. Like the type, it is an evergreen plant, and as the spike bore twelve flowers it is a decidedly promising acquisition. It was raised four years ago, and flowered for the first time in January last.

**DENDROBIUM × CHLOROSTELE VAR. OWENIANUM.**

This handsome hybrid was raised in the collection of Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, by Mr. Murray, from *D. Linawianum* crossed with the pollen of *D. Wardianum giganteum*. It is a robust plant with pseudo-bulbs about 3 feet long. The flowers are smaller than those of the pollen parent, but with the same general shape. The sepals are light blush-pink below, passing into rose-purple near the tips. The petals are similar above, but the lower half of each is nearly white. The disc of the lip bears a medium-sized maroon blotch, surrounded by an orange-yellow zone, then a nearly white area; and, finally, a rose-purple tip. The pedicels are  $2\frac{1}{4}$  inches long; hence it is likely to prove useful for cutting. It flowered for the first time in 1891. Messrs. F. Sander & Co. of St. Albans have now acquired a stock of it, and on February 14th last were awarded a first-class certificate for it by the Royal Horticultural Society, under the name of *D. × Owenianum*, but it seems preferable to regard it as a variety of *D. × chlorostele*, *Rehb. f.*, raised in the collection of Sir Trevor Lawrence from the same parentage. Our novelty was dedicated to J. Dyson Owen, Esq., of Selwood, near Rotherham, Yorks.—(*The Orchid Review*.)



**EVENTS OF THE WEEK.**—As announced in another paragraph, the Committees of the Royal Horticultural Society will meet at the Drill Hall, James Street, S.W., on Tuesday, March 28th. On the afternoon of the same day a general meeting of the British Fruit Growers' Association will be held at the Hotel Windsor, Victoria Street, to which all members are invited. A Show of spring flowering plants will be held at the Crystal Palace on Saturday, March 25th.

— **THE WEATHER IN LONDON.**—Dry weather has again characterised the past week, although at times cold winds prevailed. Sunday was warm, but with local fogs, similar weather occurring on Monday and Tuesday. Wednesday opened rather damp and cold, but at the time of going to press it appears to be clearing. Severe frosts have been prevalent, as much as  $10^{\circ}$  and  $12^{\circ}$  being general.

— **WEATHER IN THE NORTH.**—The high winds and showers of the 14th and 15th have been followed by calmer weather. Heavy snow-falls occurred on Thursday and Friday, with frosts of  $5^{\circ}$  and  $6^{\circ}$ . Saturday was bright and fine for the season, the thermometer showing  $9^{\circ}$  of frost in the morning. During the night we had  $12^{\circ}$  of frost, followed by a milder and pleasant day; and Monday was extremely fine, bright, and mild. This morning (21st) the ground is white with hoar frost, and  $5^{\circ}$  frost are recorded.—B. D., *S. Perthshire*.

— **GARDENERS' ROYAL BENEVOLENT INSTITUTION.—ACTS OF KINDNESS.**—Mr. G. J. Ingram, Secretary of this excellent charity, writes as follows:—"Will you kindly give publicity in your widely read journal to the following communication, which I have received from a gentleman who has long been a subscriber to the Institution: 'Sincerely sympathising with the cases of John Butler and Jane E. Nichols, who have been unsuccessful candidates for the pension of the Institution at the last five annual elections, it is my intention to place at the disposal of the Committee, and I hand you a cheque for £36 herewith, the amounts necessary to provide for the present year the allowances to which they would respectively have been entitled had they been elected in January last; at the same time I earnestly hope that special efforts will be made to secure their election on the next occasion.' I need hardly say how gratefully this anonymous gift has been received, nor how glad the hearts of the two candidates mentioned have been made by the good news that I have conveyed to them. Will you also allow me to say that another gentleman, who desires his name to be withheld, has handed me £5 5s. for an exceptional case of suffering and distress which has been recently brought under the notice of the Committee?"

— **ROYAL HORTICULTURAL SOCIETY.**—The next display of fruit, flowers, and vegetables will take place in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, March 28th. The various Committees will, as usual, meet at twelve o'clock; at 3 P.M. Monsieur Henry de Vilmorin, of Paris, will deliver a lecture on the "Flowers of the Riviera," which is sure to prove interesting.

— **TOMATOES AND MUSHROOMS FOR PROFIT.**—Can any of your practical readers inform me if Tomatoes growing under glass for market pays, say in a house 100 feet by 20 feet? How many plants could be planted in such a house to return good produce? I should be glad of particulars of construction. Would Mushroom growing in winter after Tomatoes pay after cost of manure, fuel, and labour, locality about twenty miles from London?—NEMO.

— **DOUBLE ZINNIAS.**—I quite agree with Mr. Molyneux's remarks on page 203 as to the usefulness of Zinnias. A bed of Zinnias with an edging of *Centaurea candidissima* or French Lavender makes a fine display. Last season we had three large beds, which were greatly admired. The seed may be sown in boxes in a vinery. The seedlings can be hardened off gradually. Prefer dull weather for planting out, or shade for a time until they are established. Do not plant out till the end of May or the beginning of June.—G. F., *Trafalgar*.

— **BIBLIOGRAPHY OF THE ROSE.**—A copy of a useful book on Rose bibliography has reached us from the author, Senor D. Mariano Vergaro, Madrid. Its title is "Bibliografia de la Rosa," and it is written in Spanish, but it would not be valueless to British rosarians unacquainted with that tongue, for the original French, German, English, and other titles are given for the different works and periodicals listed. The list of books is given under the names of the authors, which are arranged alphabetically; that of the catalogues in sections reserved to each country.

— **GARDENING APPOINTMENTS.**—Mr. W. Barnes, for twenty-two years at Himley Hall Gardens, and for the last thirteen years as general foreman, has been appointed head gardener to G. H. Claughton, Esq. The Gardens, Priory, Dudley. Mr. J. E. McCleave, late gardener to, R. Heywood Jones, Esq., Badsworth Hall, Pontefract, Yorks, has been appointed head gardener to Sir Robert Afflick, Bart., Dalham Hall, Newmarket, Suffolk. Mr. F. Hereman, for the past three years foreman to Mr. W. Lane, King's Ride, Ascot, has been appointed gardener to the Lady Isabella Keen, Rose Mount, Sunninghill, Ascot.

— **ARE WEED KILLERS DANGEROUS?**—In reply to "T. W.," page 72, a good weed killer, in my opinion, is one of the gardener's great friends, but at the same time it is a bad master. It should be carefully used; it should never be employed in gardens where the water from the paths has an opportunity to drain into the tanks. I remember one instance where a weed killer was used on a drive in a large park without sufficient care, where it was allowed to touch the grass edges. Being of a salty nature cattle ate the scorched grass, and two of them died, and several more were in a dangerous condition for some time afterwards.—G. F.

— **SCOTCH FIR.**—The present is a favourable time for planting evergreen Firs in a small state. I find that the Scotch Fir is not only a really good nurse tree in any situation, but grows exceedingly fast. For planting in low-lying places this Pine is valuable, as being late in commencing to make its growth in the spring there is not nearly so much danger of injury from frost as in the case of Spruce Fir, for instance. The glaucous tint which Scotch Firs carry is particularly interesting to some, and on that account this tree is deserving of extended planting in much-frequented sites. Some persons predict a great future for this tree. In years to come when Baltic timber becomes exhausted Scotch Fir will be valuable.—E. M.

— **SUNSHINE AT REGENT'S PARK.**—At a recent meeting of the Royal Botanic Society, Mr. George W. Bell in the chair, the Secretary said the bright weather which characterised the early part of March was much appreciated by plant life, and had brought out the early flowers in the garden and conservatory in a remarkable degree. It had led him to examine the records of bright sunshine made in the Gardens. He found that for the last few years there had been a steady improvement. Last year the total, 1214 hours, was considerably in advance of any of the five previous years, that of 1888 being only 898 hours, and the average of the five years 1037 hours. On Friday, March 10th,  $8\frac{1}{2}$  hours were recorded, a most remarkable amount of sunshine for London at this time of year.



— BRITISH FRUIT GROWERS' ASSOCIATION.—A general meeting of this Association will be held at the Hotel Windsor on Wednesday, March 28th, at 2.30 P.M. It is hoped that as many members as possible will attend.

— DEATH OF MONS. JEAN-EUGÈNE CHAURÉ.—We have received a notification of the death of this gentleman, who was chief editor of the *Moniteur de l'Horticulture*. M. Chauré died on the 1st inst. at Parc Saint-Maur (Seine), France, at the age of seventy-two, and his loss is mourned by many friends.

— FLOWERS IN THE SCILLY ISLES.—According to Mr. T. Dorrien-Smith the flower industry in the Scilly Isles was anything but remunerative twelve years ago. Last year, however, 330 tons were sent away for sale, and this year Mr. Dorrien-Smith estimates the quantity will reach quite 400 tons. During the month of February 182 tons were despatched.

— EXTREME WEATHER IN WILTS.—On the 18th inst. cold piercing north-east winds were followed with a sharp frost, the thermometer falling to 21°. The 19th inst. was fine with less wind, the thermometer rising to 62° outside. Apricots, Peaches, and Nectarines are now opening their blooms freely, but the fine dry weather so far is greatly in their favour for the outside trees.—G. F., *Trafalgar*.

— THE VALUE OF TOADS.—Our respected transatlantic contemporary, the *Garden and Forest*, says: "In England toads are valued as destroyers of insects, and are offered for sale for 1s. apiece, it is said, in the London markets, being bought by market gardeners." It is questionable whether any market gardener in this country would give 1s. for a toad. If such were the case a new industry would quickly arise.

— CYTISUS SCOPARIUS ANDREANUS.—This is a very distinct and beautiful plant, and lovers of hardy flowering shrubs should not fail to add it to their collections. The upper portion of the flower is a clear canary yellow, the inside petals rich velvety chestnut red with yellow reverse, forming a pleasing and effective contrast; and the upright habit of growth shows the flower to the best advantage. It originated as a sport in a field of wild Broom, and is obtainable from the best nurseries.—H. RICHARDS, *Roche Court*.

— BOTANY IN AMERICA.—In no country of Europe, not even in Germany, are the results of scientific research more eagerly seized upon for application to the industries than in the United States. This is especially true as regarded the natural sciences and the industries of agriculture and horticulture. As now reported, the State Governments maintain no fewer than thirty-two botanical stations. Systematic botany and the physiology of plants are studied more or less at all these stations; and at every one of them particular attention is given to the diseases of plants and the disease-causing fungi.

— SUNNY DEVON.—Apropos of Mr. J. Moorman's remarks (page 217), the following cutting from a recent issue of the "Western Daily Mercury" might be worthy of insertion in the *Journal*:—"Summer is come—one would think so—at least, at Torquay. The winter has been exceedingly mild, if wet, and beautiful spring weather has been experienced for some weeks. During February there were twenty-two days of bright sunshine out of twenty-eight. This lovely mildness has continued during the present month. Flowers in abundance fill the public gardens. Violets are as common as Daisies in summer. The Torbay Road and Rock Walk is a veritable Garden of Eden, and its floral display reflects much credit on the gardener (Mr. Dyer) and his assistant (Mr. Greek)."—DEVONIAN.

— FLOWERS AND THEIR RELATION TO INSECTS.—This was the title of a lecture given by Professor Denny at Sheffield recently. Pollen, it was pointed out, was an essential element in the reproduction of plants, and in order to secure its free distribution Nature had developed all sorts of marvellous contrivances. In some cases wind-borne germs were carried from one country to another. Insects were the principal agents in bringing about cross fertilisation. Bees and flies, flitting hither and thither, carry pollen from flower to flower, and thus secure the most vigorous development in the floral descendants. In order to utilise these little unconscious fertilisers to the best advantage, Dame Nature availed herself in the shape of the most dainty devices of such contrivances as miniature decoys, platforms, springs, trap-doors, levers, and drawbridges. The gay colours and sweet scents of plants, their nectaries and honey glands were simply so many baits to attract insect visitors.

— CRYSTAL PALACE SUMMER SHOW.—Her Majesty the Queen having fixed May 10th for opening the Imperial Institute, the dates of Crystal Palace grand summer Flower Show are altered to Thursday and Friday, May 11th and 12th.

— A GOLD MEDAL HERBARIUM.—According to the *Chemist and Druggist* Dr. Justus Karl Hasskarl has been awarded a gold medal by the Dutch Government in acknowledgment of the gift of his herbarium to Leyden University. The herbarium consists of over 20,000 botanical specimens, mostly collected by the donor, and arranged by him.

— A TEA GARDEN AT THE CRYSTAL PALACE.—A handbook of the arrangements for 1893 has been issued by the Crystal Palace Company, and in addition to the flower shows to be held there, we observe that a model of a Tea garden in Assam has been arranged in a building on the north lawns. Indian Tea plants may there be seen in a healthy state of growth, and the preparation of the Tea is carried on in all its stages of withering, fermenting, rolling, and drying by natives of India. The model has been arranged by Mr. Patrick Macgregor, an old Tea planter of Assam.

— KINGSTON AND SURBITON GARDENERS' ASSOCIATION.—The first ordinary meeting of this new Society was held on the 15th, when Mr. T. Cushon, of Norbiton Park Gardens, read a very practical paper on the Amaryllis, for which he received very hearty thanks. Several gentlemen were elected Vice-Presidents, and others became honorary and ordinary members. Mr. Cushon's contribution of several well-flowered Amaryllis was much appreciated. Mr. J. Walker, of Ham, having kindly consented to allow the members to inspect his extensive breadths of Narcissi at an early date, it was agreed to visit Ham about the 10th of April.

— BECKENHAM HORTICULTURAL SOCIETY.—The Committee of this flourishing suburban Society having arranged for a course of lectures to the members, the first of the series was given at the Public Hall by Mr. A. Dean of Kingston on Friday evening last. The subject of the lecture was "The Potato." This was treated very exhaustively, dealing with its origin, gradual development, cultivation, exhibition aspects, diseases, and antidotes. The lecture was aided by some very fine samples, illustrating sections and varieties. The Rector of Beckenham presided, and there was a large attendance of members, one of whom exhibited a well-bloomed *Cattleya Trianae*, and some very fine Seakale and Mushrooms. Mr. Dean will lecture on the Tomato on Friday next.

— ROYAL TREES.—On Friday last Her Majesty the Queen, also the Empress Frederick, and Princess Beatrice, visited Major the Honourable H. C. Legge at his residence, The Gardens, Fulmer, Slough. After having tea with the Honourable Mrs. Legge each of the Royal personages planted a tree on the new lawn, Mr. W. Mowbray, the gardener, assisting in the work. When the ceremony was over the Major kindly presented the trowel that had been used to his gardener with an appropriate inscription engraved thereon as a memento of the occasion. After serving at Fulmer faithfully and well first the late Earl of Leven and Melville for twenty years, and subsequently the present proprietor for two years, Mr. Mowbray is retiring for a well earned rest, his son, Mr. John Mowbray, who has proved his ability as a gardener, succeeding to the charge.

— THE BIRMINGHAM GARDENERS' ASSOCIATION.—At the last meeting of the Association, which was numerously attended, Mr. C. E. Pearson of Chilwell Nurseries, Nottingham, gave a lecture on "The Insect Friends and Foes of the Garden," illustrated by lantern slides, dealing in a very able manner with the history and life economy of each subject from the egg and larval state up to the developed moth, butterfly, or other congener; also the vegetable or animal foods required for their subsistence. Advice was also given as to the modes and antidotes commonly adopted for the extirpation of these pests, not that all of which should be regarded as pests, inasmuch as there are certain species of grubs and insects that prey on each other, thus assisting to preserve a balance in nature, which their extraordinary procreation attribute tend to overbalance. Gardeners were earnestly advised to cultivate an acquaintance with entomology, not only as a means for the readier detection and dealing with injurious insects, but also as an interesting recreation for the mind. Specimens of *Anastatica hierochuntica*, the "Rose of Jericho," were exhibited by Mr. Deans (Messrs. Pope & Sons), also dried specimens were contributed by him of some Resurrection Mosses or Selaginellas, all forming a most interesting exhibit. Mr. Walter Jones also exhibited very fine *Cineraria* blooms.



— **ESSAY ON MANURES.**—I find a mistake in the paragraph on Potatoes (page 213), which I shall be glad if you will rectify. The yield of Potatoes should read three to four bags (of 180 lbs.) per rod (not rood), and the word "rod" should also be used three lines farther down in the same paragraph.—G. A. BISHOP.

— **SCOTTISH HORTICULTURAL ASSOCIATION.**—In giving a lecture on the "Cultivation of Peaches and Nectarines" before this Association recently, Mr. Fairgrieve, Dunkeld, said the particular branch of fruit culture which was the subject of the lecture was as of great importance as any in the field of horticulture. As they were aware, there was an increasing demand on the part of the public for fruit, and it was to be deplored that good sound fruit was not within the reach of all. It was the case that foreign countries could not supply Peaches and Nectarines in good condition, and that being so, it was for home growers to show that that fruit could be produced in this country. It might be asked whether the Peach could be grown out of doors to perfection in Scotland, and to that question his answer was that it could, although in many situations it could not. Mr. Fairgrieve dealt with his subject in a practical manner, discussing the question of situation, drainage, stock, and other aspects of the matter in detail, and giving in each case the results of his experience as a grower.

— **IRIS RETICULATA.**—Coming round to Guildford the other morning by rail I was interested with a few passing remarks from some fellow passengers who were struck with some flowers growing in a border beside the platform at one station. I looked over their shoulders and saw that the flowers were a couple of lovely clumps of this early Iris. Just at the moment an official came by, to whom appeal was made for the name of the flower, when he gravely replied, "*Hiris reticulata*," placing special emphasis on the aspirate. This was exceedingly amusing. But apart from the incident it really was delightful to see such fine clumps of this pretty Iris thus blooming at a railway station, and yet there are thousands of pretentious gardens that does not contain a plant of that or other early bloomers.—A.

— **HORTICULTURAL CLUB.—DISCUSSION ON HOME AND FOREIGN FRUIT.**—The usual monthly dinner and conversazione took place on Tuesday evening, 14th inst., at their rooms, Hotel Windsor. There was a large attendance of members, the chair being occupied by the Rev. W. Wilks, Secretary of the Royal Horticultural Society. Amongst others present were the Revs. F. H. Gall, and F. R. Burnside, Messrs. Geo. Bunyard, Geo. Monro, James Webber, Geo. Paul, Jos. Cheal, J. C. Stogden, Arnold Moss, J. S. Cousens, C. T. Druery, J. Assbee, Peter Kay, Alfred Watkins, J. Walker, and Selve Leonard. The discussion was on the effects of imported fruit on British fruit-growing, which was opened by Mr. James Webber, followed by Mr. Geo. Monro. Mr. Webber's opinion was that as foreign fruits came in before our English-grown fruits were ready he did not think that in most cases competition was injurious, for that as soon as the English-grown fruits appeared on the market the foreign fruit disappeared. The one fruit in which he thought we must be dependent more or less on foreigners was Pears, of which, however, only five varieties were exported to us—Williams' Bon Chrétien, Duchesse d'Angoulême, Beurré Diel, Glou Morceau, and Easter Beurré, and that several of these were not of first-rate quality, certainly not equal to Doyenné du Comice. The same held good with regard to vegetables—as, for example, Lettuces and Asparagus, which were largely imported early in the season; but as soon as the English producer could put his produce on the market the foreign disappeared. Mr. Monro fully corroborated these statements, and at the same time spoke of the injurious effects of the high price of railway carriage, stating that fruit from the Continent could be carried at a lower rate and for a greater distance than the English grown. An interesting discussion followed, in which most of the members present took part. Amongst other things, it was contended that the English public required to be educated on the subject of fruit, and to be shown that high colour, which is more easily obtained in hotter climates is not a proof of excellence, and that, as far as flavour was concerned, no country in the world can produce better Apples than the British Islands. The fruits of Canada, the States, Tasmania, and California are more brilliant in colouring, but not equal in flavour. The Chairman, in summing up the results of the discussion, remarked that perhaps something might be said on behalf of the railway companies, who had to consider the shareholders as well as the public. He also proposed a cordial vote of thanks to Messrs. Webber and Monro, which was carried with acclamation. All felt that a valuable and interesting discussion had been carried out. Several new members were admitted.

— **HEAVY RAINFALL.**—W. Mabbott, The Gardens, Gwernllwyn House, Dowlais, Glamorganshire, writes:—"I have not noticed a heavier rainfall recorded in the *Journal of Horticulture* than has been experienced here. The week ending February 3rd, the fall was 3.19 inches; the week ending February 10th, 1.42 inch; week ending February 17th, 2.95 inches; week ending February 24th, 1.61 inch; and from February 24th to March 3rd, 2.56 inches. The rainfall during January was 3.80. The total rainfall for 1891 was 63.30, for 1892 was 39.56."

— **ESTATE MANAGEMENT.**—"Cotswold" writes:—"I am grateful that 'A Farmer's Wife' was aroused, and to you for giving her reply on page 211 to the letter in the previous week's issue. It matters very little what a man comes from professionally. If he is capable he is the right man: if he is incapable he is the wrong man. What we want are resident gentry, and no charges allowed on land. Old English pastimes are not to be sneered at. With the legislation likely to come the tenants of farms and small holdings will be placed very much beyond interference, and therefore education is the requirement all round, agricultural and horticultural, not fault-finding with the resident landlord who rides to hounds."

— **THE FRUIT INDUSTRY IN CORNWALL.**—In giving a lecture on fruit culture in Cornwall recently at Kea, Mr. Lawry, C.C., a successful grower, remarked that in his parish they had 700 or 800 people, and they turned out 2000 gross of small fruit baskets per year, besides their own wants. And what was more, they could do it at 2s. 9d. per gross, whereas in London they could not get them under 5s. There was, he said, no knowing what Cornish people could do when they put themselves to work. Girls and boys of the parish made these baskets in the winter, and in the summer picked the fruit; earning for the former 11d. per gross, working five or six hours; and for the latter 2s. and 1s. 6d. a day according to the kind of fruit picked.

— **PARASITISM IN PLANTS.**—At the Museum, Newcastle, recently, Professor G. S. Brady, F.R.S., delivered a lecture on parasitism in plants and animals, this being the fifth of the six popular lectures arranged by the Natural History Society. Dr. Embleton presided, and there was a good attendance. Dealing with the parasites on plants, Professor Brady said a true parasite usually had no green colour about it. It had lost all the green colouring matter of its leaves, and became a brown or pinky flesh colour. Green colouring matter, or chlorophyll, was really the essential, not only of vegetable life, but indirectly also of animal life. Those plants which lost the green colouring matter had become degenerate. They also lost their woody tissue to a large extent.

— **SOME SOCIETIES' AMENITIES.**—The engineer of the N.C.S. we find pouring out a bitter complaint against the action of the National Auricula Society in a contemporary, such as makes Mr. Godfrey's growls at the N.C.S. seem tame and commonplace? What does he charge against the N.A.S.? Why, that an expert is brought up to London, employed to dress and help to set up a particular officer's flowers, and then judge them. "I know 'un, he comes from Sheffield," *vide* a "Pair of Spectacles." How much it seems to depend on which "pair of spectacles" is worn, whether those of the N.A.S. or the N.C.S. The moral of all this is, that those who control these or other societies should avoid in every way the appearance of injustice or partiality. But at present what appears orthodox with the N.C.S. would seem with the N.A.S. to be rank heresy.—DIOGENES.

— **THE WEATHER IN AMERICA.**—In a letter dated March 2nd my old friend, Mr. J. W. Lawrence, Harrisburg, P.A., United States, who was up to twenty years ago for nearly twenty years gardener at Farnham Castle, near Aldershot, says, "We are still floundering on through our long severe winter which has kept us frozen up since the latter part of December; but we have not been much below zero, and have not had a great quantity of snow, but what there has been was badly drifted, and we had to take down panels of fencing and cross some fields to get to town. I see by the newspapers that you have had some of it, but a bad English winter is comfortable compared with ours. The ground is frozen 3½ to 4 feet deep, and the snow-banks will not be gone before April. We are still to the front in Primulas, and could not supply all customers last year with young plants, and we hear of none equal to our strains. Trade in Harrisburg has been bad for a long time, and no one seems to have any money to spend. You must not believe all you hear of the wonderful prosperity of this country, as we see daily reports of wages falling and prices of necessities rising." Mr. Lawrence has kept himself from time to time fully supplied with seeds of the superb varieties of home-grown Primulas.—W. D.



— *SCILLA SIBIRICA*.—What a fine effect this lovely blue-flowered bulbous plant produces throughout the present month! No matter under what conditions it is grown it seems to be able to take care of itself; but, like the majority of plants, it well repays the extra labour involved in giving it good culture. We have large numbers of it in various positions, many clumps being located in places where but little attention can be given to them, while others are growing in beds and mixed borders. In all instances they flower regularly and profusely, but those in the latter position have by far the largest flowers; the annual manuring and constant stirring of the soil doubtless produces this effect. I think this fine plant would become even more popular than it is if the bulbs were planted in large clumps or masses. No idea

grows to perfection, is the beautiful *Merveille de Lyon*. Mr. William Paul's Salamander is another impressive variety which Mr. Smith grows and exhibits with distinguished success.

The Rev. James A. Paton, B.Sc., Minister of the Parish of Inch, who himself buds every autumn 500 of the finest Roses, and has frequently gained first prizes at Edinburgh, where he had to compete with eminent professional floriculturists, is entitled to be accounted an accomplished rosarian. Mr. James Hogarth, forester to the Earl of Stair at Castle Kennedy, is a most successful cultivator of Japanese Lilies; while the Rev. Dr. Barty, Minister of Kirkcolm, excels in the culture of herbaceous flowers.

All of these horticulturists, in virtue of their attainments in one of the most exquisite and elevating regions of activity, are entitled to recognition in the *Journal of Horticulture*.—DAVID R. WILLIAMSON.



FIG. 48.—CARAGUATA CARDINALE.

of its great beauty under such conditions can be formed by seeing it only in small clumps or lines. A broad, richly coloured mass of this blue Scilla, edged with a band of bright yellow Crocus, is a sight to be remembered.—H. DUNKIN.

#### WIGTONSHIRE HORTICULTURISTS.

THE County of Wigtonshire, in the extreme south of Scotland, can boast of several horticulturists of considerable eminence. The Floricultural Essays of Sir Herbert Maxwell, M.P. for this county, in the *Nineteenth Century* and other periodicals, are well known to English readers, and have frequently commanded by their originality the attention and approbation of the London journals. His article on "Gardening," which is one of his finest efforts, has not yet been included in his collected works; but I am assured by the cultured baronet that it will have the privilege ere long of being embodied in a new volume of Essays.

In Wigtonshire we have a very successful and popular rosarian, Mr. Thomas Smith of Stranraer, who has frequently carried off the premier prizes at the leading Scottish Horticultural Shows. His splendid display of 1000 blooms at the great Glasgow International Exhibition was much admired by Her Majesty the Queen. His favourite Rose, which he

#### CARAGUATA CARDINALE.

WHEN exhibited at the Drill Hall, on Tuesday, March 14th, by Messrs. B. S. Williams & Son, Victoria and Paradise Nursery, Upper Holloway, the above-mentioned plant created much interest, and was awarded a first class certificate by the Floral Committee of the Royal Horticultural Society. It is a remarkably showy South American Bromeliad, and when well known will doubtless become a favourite plant. The specimen exhibited, and from a sketch of which our illustration (fig. 48), has been prepared, was of a dwarf habit, though very attractive in appearance. The leaves are about 18 inches in length and 1½ inch in width, and deep green. From the centre of these, as depicted in the engraving, arises the dense bracts of a bright scarlet or cardinal colour.

Like most of the bromeliaceous plants, *Caraguata cardinale* requires a stove temperature and similar treatment to that generally accorded *Billbergias* and *Tillandsias*. The plant remains in flower for many months, and it will doubtless prove a valuable acquisition.





## NEW FRENCH ROSES.

(Continued from page 215.)

- 15, *François Menard* (Tesnier).—Crimson red, centre cherry red, passing into velvety crimson. Very large, very full; globular firm stem.
- 16, *Ingegnoli prediletta* (Bernaix).—Light rose, mauve on the outside, peach colour inside. Large, semi-double, and cup-shaped.
- 17, *Joseph Teyssier* (Dubreuil) very pale rose, sometimes red, shading off to chrome yellow at the base; sometimes dark rose and carnation colour.
- 18, *Jules Bourquin* (Chauvry).—Chrome yellow, bordered with light lilac. Very large, very full; bud rounded. One of the Dijon race.
- 19, *Karl Maria Von Weber* (Turque).—Dark carmine, at the base yellow. Half full, long bud, flowering singly; very sweet. A seedling from Lajeune Poczeau and Luciole.
- 20, *Krimhilde* (Drogemeller).—Charming yellow, passing to purple rose, the centre golden coppery yellow.
- 21, *La Caleta* (Prieze & Ketten).—White, shaded with rose, the centre yellow, coppery salmon, large and full.
- 22, *Léonie Osterrieth* (Souper & Notting).—Porcelain white, centre shaded with tender yellow, very full, cup shaped and sweet; a seedling between Sylphide and alba rosea.
- 23, *Leon XIII.* (Souper & Notting).—White, lightly shaded with straw coloured yellow, centre light ochre, large, full and with long buds; a seedling from Anna Ollivier and Earl of Eldon.
- 24, *Louise Bourbonnand* (Nabonnand).—Light golden rose, base golden, very large, full, upright footstalk, with large buds, flowering singly and very sweet.
- 25, *Madame Albert Patel* (Godard).—White, passing into flesh colour, large, very full, showing early, bud round, and very
- 26, *Madame Frenlon* (Moreau Robert).—White, lightly tinted with rose; large, nearly full, and sweet.
- 27, *Madame Henri Greville* (Tesnier).—Yellow, centre lemon colour, bordered with flesh-coloured salmon rose; large and very full, globular.
- 28, *Madame Jean Bansillon* (Godard).—Straw colour flower shaded to yellowish white; large, full, generally single, long bud.
- 29, *Madame Louis Gaillard* (Liabaud).—White flower, shaded yellow; large, full, and sweet.
- 30, *Madame Louis Lévêque* (Lévêque).—Bright red fleshed with light yellow, shaded salmon and white centre darker; large, full, and globular.
- 31, *Madame Martin Cahusac* (Lévêque).—Coppery rose shaded golden yellow, red at the base of petals; very large, full, and gloular.
- 32, *Madame Ocker Ferenex* (Bernaix).—Pale canary, nearly white, tinted with chrome, outside petals often bordered with rosy carmine; large, full, and pointed bud.
- 33, *Madame Guillaumex* (Bonnaire).—White, silver in the centre, shading to orange yellow; medium or large; very full, globular, and firm erect footstalk.
- 34, *Mai fleuri* (Tesnier).—White, glossy satiny velvet; flower very large, very full, Jasmine scented; long bud, erect footstalk; blooms singly; a cross between Fortune's Yellow and Maréchal (Tea).
- 35, *Maman Cochet* (Cochet).—Carnation rose flushed with clear carmine and mixed with nankeen salmon, very large, full, and sweet; outside petals large, the centre sometimes composed of rosette, or indeed nearly cup shaped; almost always holding itself upright. In fact I hardly think from this description it can be anything but a horribly confused flower.
- 36, *Marguerite Breslier* (Jean Ducher).—Light rose colour mingled with rose peach, inside slightly rose; large, full, and sweet.
- 37, *Pierre Mareadier* (Jean Ducher).—Creamy yellow, inside sometimes coppery, very large and very full; seedling from Comtesse de Nadaillac, to which it bears some likeness.
- 38, *Pilar Domedel* (Pries & Ketton).—Very bright rose marbled with white, pale rose when opening, centre lighted with yellow.
- 39, *Président de Lestrade* (Puyradard).—Flame colour, marbled with rose, and sometimes coppery; large, full, and buds long. A cross between Madame de Watteville and Madame de Tostas.
- 40, *Prince Hussein Kamil Paacha* (Souper & Notting).—Flower blush silver at base, in the centre ochre yellow, with golden back to petals; large, full, more globular than flat. A cross between Anna Ollivier and Reine de Portugal.
- 41, *Princesse de Monaco* (Dubreuil).—Brilliant creamy yellow, outside flesh-coloured rose, tinted with chamois; large, full, with long bud.
- 42, *Siegfried* (Drogemeller).—Dark salmon, large, and very double, cup shaped; very sweet.
- 43, *Sœur Severin* (Reboul).—Silvery white, centre lightly striped; large and full.
- 44, *Souvenir de Claude Dupont* (Godard).—Dark rose, sometimes shaded, large and full.

45, *Sir de Ludovic Talansé* (Pelletier).—Blush white, centre flesh colour, border of petals canary yellow, very large, bud long, egg-shaped, opening well. Cross between Madame Gallet and Céline Noirey.

46, *Souvenir de Madame A. Henneveu* (Bernaix).—Variable in colour, salmon china rose, veined with carmine, often coppery red with reverse amaranth, full, large, with egg-shaped bud.

47, *Souvenir de Mlle. Victor Caillet* (Bernaix).—Pure white flowers with cream colour, large, full.

48, *Thiron-Montauban* (Puyradard).—Bright red, sometimes dark red, full, and large.—D., Deal.

(To be continued.)

## ROYAL HORTICULTURAL SOCIETY.

MARCH 14TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair), Mr. Michael, Mr. Blandford, Dr. Scott, Prof. Oliver, Rev. W. Wilks, Prof. Farmer, Dr. Müller, Mr. Wilson, Prof. Ward, and Rev. G. Henslow, Hon. Sec.

*Sargasso Weed*.—Mr. Blandford exhibited a specimen collected off the Azores. He also remarked upon a perfectly successful experiment of bringing fresh green Cocoa Nuts from Jamaica in the refrigerator of a vessel.

*Tipulæ in Soil*.—Dr. Müller exhibited some grubs which were pronounced to be a species of this insect allied to the common *T. oleracca*, or Daddy Long-legs.

*Blue Primulas*.—Mr. Wilson exhibited about fifty varieties of different shades of blue, plum-blue, and bluish-violet Primroses, all being seedlings from the original "Scott Wilson," and grown at Weybridge and Wisley.

*Knotted Oak Branch*.—Dr. Masters exhibited a specimen of this well known peculiarity, the stems being sometimes used for walking sticks. He had referred it to a fungologist, who had detected the presence of the fungus *Dischæna discina*. It was a question, however, to be solved whether this fungus was the cause of the knob-like protrusions or not. It was referred to Prof. H. Marshall Ward for further examination and report.

*Cecidomyia Taxi*.—Prof. Farmer exhibited specimens of Yew sprays affected by this well known parasite, which causes an arrest of the axis and the leaves to form a rosette. The question was raised as to whether the shoot subsequently elongated or not. In Mr. Henslow's garden both male and female Yews are always affected by it, the tufts of leaves and shoots attacked dying every year.

*Injuries to Plants by Certain Substances Present in Coal Smoke*.—Prof. Oliver exhibited several results of his experiments in testing the effects of the ingredients of fog and their allied substances upon plants. A frond of *Pheopteris trichoides*, subjected to the vapour of phenol under a bell-glass, was blackened. White Lilac became of a chocolate brown colour; white Cyclamens, however, being unaffected, though killed. It was remarkable that the alcoholic extract of chlorophyll made from the blackened frond was identically like that of the uninjured green leaf, showing that the chlorophyll was "masked," but not altered in character by the phenol. The effects of pyridine were not so marked, as the Lilac and Cyclamen were only slightly tinted with a pale brown colour. Prof. Oliver had tested these and other plants for tannin, but the distribution of this substance in organs which change colour with or resist phenol and other coal-tar products, was found to be such that no positive conclusions could be drawn.

Professor Oliver also showed the effects of sulphurous acid gas, so prevalent in urban fogs. The above-mentioned white flowers were killed by its action. The spectrum of chlorophyll of leaves subjected to its action showed the usual modifications due to the presence of an acid. It is to be noted that the effects produced were only on living protoplasm, no such results occurring if the protoplasm had been previously killed.

Dr. Scott said that he hoped Prof. Oliver would be able to throw some more light on the falling of almost uninjured leaves, which was perhaps the most remarkable of the effects of fog. In these cases the leaves, when they fall, are alive, and show scarcely any symptoms of poisoning. He thought it possible that the investigation of this phenomenon might help to explain the immediate cause of the normal fall of leaves in autumn, as to which we at present know little more than the anatomical conditions.

Prof. H. Marshall Ward, in commenting upon Prof. Oliver's elaborate report, observed that the author had evidently attacked the problem quite in the right way, by experimenting on plants with the separate ingredients of urban fogs; and that as the report showed, the investigation had raised a number of interesting and very important questions in vegetable physiology. It was, indeed, a matter of surprise to see how much information Prof. Oliver had extracted from his investigations in the short time at his disposal. He trusted that the author would persevere with his experiments, as he would have the hearty sympathy of everyone interested in the subject. Prof. Ward alluded to some old experiments of his own in which he found that in fine, dry, bright, and sunshiny weather plants resisted the effects of sulphurous acid better than in dull seasons, thus correlating in an interesting manner the results of Prof. Oliver, in that in foggy weather sulphurous acid gas was most effective in injuring plants. The result of this action was a plasmolysis and diffusion giving the appearance of "sweating" in the cells. The sulphurous acid in the gaseous condition penetrated the inter-cellular spaces of the tissues, and entered the cells in solution.



Dr. Müller called attention to the statement in the report that, according to Dr. Bailey, the organic matter which forms a large proportion of the greasy deposit left by fog, and which proved so injurious to plants, consisted mainly of some form of pyridine. Now, considering that pyridine is a rather volatile liquid substance, this is a somewhat surprising fact, and the question arises how the pyridine and other similar volatile constituents of smoke become thus fixed and precipitated. He suggested that this probably is brought about by the agency of the particles of solid hydro-carbon and tarry ingredients of the fog, which possess great affinity for these volatile substances and absorb them. It is now well understood that these solid constituents of the smoke, along with the mineral dust suspended in the atmosphere, form the primary cause of the formation of fog.

Dr. Masters exhibited sprays of Holly, Skimmia, and Aucuba covered with sooty deposit of fog, but yet the foliage was apparently healthy. He attributed their capability of resisting the deleterious influences by the great thickness of the cuticle possessed by these plants. He observed that evergreens often possessed in addition two or three rows of palisade cells, and were thus enabled by their structure to offer resistance to injurious vapours. Dr. Masters also observed that plants with an aqueous hypodermal layer, such as was present in certain Orchids, might on that account be better able to resist the injurious effects of fogs. Mr. Henslow added that E. I. Rhododendrons have much tannin, a moderately thick cuticle, and aqueous layers on both sides of their leaves, and as they withstood the fogs well these features might corroborate Dr. Masters' suggestion. Dr. Masters also remarked on the observation of Prof. Oliver that Monocotyledons appeared to be less liable to injury than Dicotyledons. He threw out the suggestion that as so many of the former class have a more or less erect phyllodinous foliage, the fog deposit would be less likely to accumulate upon it than on the more usually horizontal blades of dicotyledonous plants. In addition to this morphological feature was the anatomical structure—viz., there being two palisade layers and the presence of stomata on both sides, &c. Such and other histological differences might prove to account for some of the differences mentioned.

The thanks of the Committee were unanimously tendered to Prof. Oliver for his interesting and valuable report.

#### GRAPES AT FLOORS CASTLE.

I WAS very pleased to see Mr. McKelvie's notes, page 203. He knows the writer very well, who regards him as being both shrewd and competent. That the old Vines under his care still flourish is pleasant to notice, as there is an interest attached to old stagers. I was wrong in my surmise that the photo which you illustrated recently of the Floors' Grapes, but had they been from the original Vines I would not have been surprised, as the case in point reminded me of a photo which was taken of Grapes on the Vines which were forty years old. We know something about Grapes, but a good deal, I fear, we shall never know, more particularly the influence of different soils upon the produce. I have known in different places Muscats do very unkindly, when again with no greater care for a score of years they were never known to fail. The keeping of Grapes after they are ripe is a point well worthy of a little discussion. If they are ripe early in the year—in autumn—and not carefully ventilated, they will soon go or shrivel; then if the temperature is kept too low it will soon cause a state of matters that no care afterwards, however good, can correct. Not long since a first-class salesman showed me some black Grapes, saying, "I don't know what is the matter with these Grapes, but they won't keep." I said I thought the grower had been keeping them too long without fire heat. When Grapes are cut and bottled, it of course alters the case, and they are much easier kept in that way.—M.

IN reference to the controversy on "Grape Keeping at Floors," it is very evident that before a gardener can keep Grapes well he must grow them well. The question is, Who grew the Vines—who took out all the stagnant borders and drained them thoroughly, replanting two houses over again and absolutely restocking the others? As I had a fair share of the work on the borders I can testify as to the practical manner in which the borders were made. Plenty of half-inch bones and Thomson's Vine manure were used, and the Vines are producing what Mr. MacKellar anticipated—good Grapes—whether for keeping or present use. Such are plain facts, and I do not think the imagination of Mr. Goodacre can alter them. Perhaps it may not be out of place for me to ask him to give evidence of his own practical genius on Grape keeping (as he invited Mr. Barnes to produce his) for the benefit of the readers of the *Journal of Horticulture*.—I.

MR. GOODACRE seems ill-pleased to find that anyone should have had the temerity to comment on his remarks on the above subject, which he evidently had been at some trouble to sandwich with his paragraph on keeping Grapes (page 172); but I suppose that anything he writes to the public Press on keeping Grapes, or kindred subjects of gardening, is as amenable to comment as other people's, whether he aspires to be specially talented or not.

I have no inordinate desire to evolve a "patent" or to "adopt" any other person's without due acknowledgment; and much less have I that a discussion on the Grapes at Floors should resolve itself into a mere passage of arms with Mr. Goodacre, for whatever his qualifications

may be to write on Grapes generally, there are others as competent as himself to speak on those at Floors.

My remarks on page 79, which Mr. Goodacre characterises as an "undisguised piece of sarcasm," contain a brief statement on the history of the Grape room at Floors, which was figured on page 31, without in any way raising the question whether Grapes had been successfully kept there before it was made or not; therefore, what Mr. Goodacre's "facts" really went to "prove" does not appear to be very clear.

I should not have troubled to notice his remarks on keeping Grapes (page 172) had he not fallen into the same error as "M." in supposing the Vines were "between thirty and forty years old," and that "all the important work was done for them years ago." Without inquiring what in Mr. Goodacre's opinion is "important work," I may inform him I have read Mr. McKelvie's letter, with the result that I consider it ample proof (if proof was needed) of my statement on the same page, and at the same time sufficient correction for what Mr. Goodacre had rashly assumed to be facts—namely, that there were Vines at Floors between thirty and forty years old. "M." will likewise see from Mr. McKelvie's letter that the early vinery he speaks of on page 117 was planted again during Mr. Knight's time, and the fact of it being found so unsatisfactory when Mr. MacKellar took charge sufficiently accentuates my remarks on the cause of the premature breaking of the Vines being due to the heated border.—N. F. BARNES, *Eaton Gardens*.

#### EURYA LATIFOLIA VARIEGATA.

FOR grouping in large conservatories or cool houses where plants are a distance from the glass and receive very little light, this is one of the best variegated plants that can be grown. It is as effective in these positions as Crotons are in the stove, and I am surprised it is not more generally employed for this purpose. It certainly possesses an advantage over Crotons; it retains its colour in shady places, which Crotons do not.

Not only is this plant useful in pots, but it makes a handsome pyramidal specimen for the conservatory when planted out. Once a plant attains a fair size pruning will do it no harm, and numbers of well-coloured ends can be removed for various decorative purposes. Highly coloured foliage during the winter may be used in many positions with advantage, and prove as effective as flowers. Plants in a young state grows slowly, but once they attain a height of 12 to 18 inches they appear to make much more rapid growth. This plant in a young state needs no stopping, it branches freely, and naturally assumes a pyramidal shape.

Cuttings root freely if inserted in sandy soil and covered with a bell-glass or stood in a close-fitting handlight in a cool house. The shoots selected should be the young growths of the current season's wood. If inserted earlier in the season they may occupy a position outside, only being removed at the approach of frost where they will be safe for the winter. The young plants by spring will be rooted and ready for potting. In the early stages they grow quicker when given intermediate treatment.—W. BARDNEY.

#### ROYAL METEOROLOGICAL SOCIETY.

AT the monthly meeting of this Society, held on the 15th instant, Dr. C. Theodore Williams (President) in the chair, Mr. Shelford Bidwell, F.R.S., delivered a lecture on "Some Meteorological Problems," which was illustrated with numerous photographs and experiments. The lecturer said that one of the oldest and still unsolved problems of meteorology relates to the origin of atmospheric electricity. Many possible sources have been suggested, among them being the evaporation of water and the friction of dust-laden air against the earth's surface. Having granted some sufficient source of electrification, Mr. Bidwell said that it is not difficult to account for the ordinary phenomena of thunderstorms.

Photography has shown that the lightning flash of the artists, formed of a number of perfectly straight lines arranged in a zig-zag, has no resemblance to anything in Nature. The normal or typical flash is like the ordinary spark discharge of an electrical machine; it follows a sinuous course, striking similarly to that of a river as shown upon a map. The several variations from the normal type all have their counterparts in the forms taken by the machine spark under different conditions, and the known properties of these artificial discharges may be assumed to afford some indication as to the nature of the corresponding natural flashes. Thus, for example, the ramified or branched flash, from which no doubt the dreaded "forked lightning" derives its name, is probably one of the most harmless forms of discharge. Ever since the time of Franklin it has been customary to employ lightning rods for the protection of important buildings. According to Dr. Oliver Lodge these are of no use in the case of an "impulsive rush" discharge, which, however, is of comparatively rare occurrence. Lightning conductors, however well constructed, cannot therefore be depended upon to afford perfect immunity from risk.

Mr. Preece is of opinion that the "impulsive rush," though easily producible in the laboratory, never occurs in Nature. Mr. Bidwell made some remarks as to the duration of a lightning flash, and the causes of its proverbial quiver, and suggested an explanation of the characteristic darkness of thunder clouds, and of the large rain drops which fall during a thunder shower. The lecturer concluded with some observations concerning the probable cause of sunset colours, which he attributed to the presence of minute particles of dust in the air.





## FLORAL COMMITTEE OF THE N.C.S.

I HAVE just (March 16th) received your issue of to-day, wherein appear certain letters referring to the late election of Chairman to the Floral Committee of the National Chrysanthemum Society. I can assure your correspondents, anonymous and otherwise, that I have in no way sought the office either of Chairman or member of the Committee in question, nor can I permit my name to be connected with the contests which have during the last two months been occupying your pages.

I had been urged to accept the decision of the General Committee electing me to the office of Chairman on the assurance that, as one entirely unconnected with the late disputes, I might be instrumental in guiding the Committee into less troubled waters than it has enjoyed of late.

It is a fact that the majority was a narrow one, but two names only being before the meeting, it did not occur to me that it would be less proper, or more difficult, for the holder of the majority, however small, to accept the result of the election, than for the gentleman owning a minority of a similar extent. However, I now learn for the first time that a formal canvass was made on my behalf under the circumstances stated by your correspondents, and it is alleged that such canvass placed Mr. Gordon at a disadvantage; the suggestion of course being that the twenty votes recorded for that gentleman were due to no prior effort or understanding, a suggestion which I at once accept.

Without in any way imputing blame to Mr. Dean, who doubtless considered himself fully at liberty to act as a member, as well as Secretary of the Society, I may at once say that I could not, had I been aware of the intention, have authorised such a canvass on my behalf. In saying this I must add that I fully believe that the only object Mr. Dean had in view was to secure a chairman absolutely severed from the unfortunate issues which have lately been raised in connection with the Floral Committee, with reference to which Mr. Dean has neither sought, nor can he know, my views.

In the circumstances, willing as I am to assist the Society by any means within my power, I cannot consent—as I have to-day intimated to the Secretary—to accept either the office of Chairman or member of the Floral Committee under conditions which might, even by the remotest appearance, lead to the suggestion of partisanship, and certainly not at the cost of being drawn into the miserable squabbles into which the “Wells” and “Godfrey” cases have degenerated, and of which, I would venture to suggest, many of your readers are beginning to be somewhat tired.—CHAS. E. SHEA.

[While we have left our correspondents to record their opinions as freely on one side as the other on debateable matters of distinctly public interest, we feel it incumbent in this latest development to say that in our opinion no other step was open to a high-minded gentleman than that taken by Mr. Shea. We do not gather from letters which have been sent to us that Mr. Shea is regarded as other than admirably fitted for the position to which he was elected, but the extra official action taken in a moment of over-zeal on his behalf is strongly objected to. Mr. Shea, as an amateur and country gentleman, had in those respects, coupled with business aptitude and a judicial mind, strong claims to be considered a “fit and proper person” for the position from which he retires, and we are convinced that by no one would his election have been more cordially accepted than by Mr. George Gordon had no private action from an unexpected source been taken against him.

Mr. Gordon, by a long and honourable career in the Chrysanthemum world, has many friends. It is only natural that they should wish to see his services recognised, and hence his nomination for the vacancy which he was so well qualified to fill. Neither he nor Mr. Shea sought the position, but both very properly acquiesced in the desire of a considerable number of members to stand for election, and it could not have entered the mind of either that any private influence on the part of an official could have been brought to bear in favour of one as against the other.

No matter how good the motive that impelled to this action, it was not the less unfortunate, and bound, as might have been foreseen, to lead to “squabbles.” These cannot possibly add dignity to any society, and must eventually affect its prosperity. Causes for dissension should therefore not be created, and on those who create them by errors in judgment must rest the responsibility. We shall be glad if it can be arranged for a chairman of committee to be elected without a contest, and we should much like to see all causes of strife removed.

We did not know that Mr. Gordon was associated with the “unfortunate issues,” nor do we think the best way of ending existing differences is by public references to them. These invite replies, and we know that important members of the N.C.S. feel that the “Godfrey” case has not been frankly dealt with on its merits.]

## NATIONAL CHRYSANTHEMUM SOCIETY.

ALLOW me to tell Mr. Godfrey he misquotes me (page 222), which is surely not his “principle,” and if he refers to what I wrote he will see his mistake, which I need not further refer to; only I may tell him that

someone has sent me three copies of the letter that has often been alluded to, and I do not admire the courage displayed in the case.

Now, Mr. Dean has opened himself by replying to a few of the many who wish to guide him in working the N.C.S., I trust soon to hear he has got all raisers and growers of seedling Chrysanthemums who are on the Floral Committee to retire, as such are out of place there. If say two judges who are not Floral Committeemen, and one or two Floral Committeemen who are not raisers or growers of seedlings, be appointed to adjudicate on seedlings brought to shows, not meetings, then exhibitors would have confidence in the Society and bring their seedlings in such numbers as would make a brave show in themselves, seeing how many growers are now raising new varieties.

I see new Chrysanthemums are exhibited in a cut state. I should say this is wrong, as we want Chrysanthemums dwarfed and with stronger flower stems. If exhibited on plants as well judges could give points to such as have strong flower stems and are dwarfer than are some which we now have.—JAS. HAMILTON, *Byrkley, Burton-on-Trent.*

## JUDGING CUT BLOOMS BY COMPARISON.

COMPARISONS are odious to “Sadoc,” evidently, for at page 180 he condemns this practice with several others. Is not all judging a question of comparisons, and do not the points given mean the measuring of the distance between such? I have tried what “Sadoc” thinks is the proper way of judging, but must own I do not feel quite satisfied with it, and have seen other good judges puzzled at the result of the totals in points. I believe that the nearer you can get two objects together the easier it is to detect the difference between them. We all know what it is to go first to one garden and then another to see who has the best Grapes and flowers, and then how faulty our judgments have been when we see the produce side by side on the exhibition table.

Would “Sadoc,” in judging for the best bloom in any show, be content to give the award to a flower in any stand that had gained the highest number of points, say six? Would he not lift out what he thought the best bloom and carry it round with him to all others that had gained six points, and compare them to see if it should be the premier bloom? If this is the best test for single blooms it must apply to a stand of twelve or twenty-four blooms. To find the best, say of any two stands very near, I would remove the one to the other. This is easily done by bringing a board of twelve blooms and having it held by anyone; then we will start with the left hand flower in the back row, working towards the front, not searching for flowers of the same variety, although the same two varieties will be often found placed in the same places in different stands, such as *Etoile de Lyon* and *Vivian Morel*, for exhibitors know the best places to put the telling flowers. On the same principle of judging for the premier bloom in a show one variety is pitted against the other, so are these flowers taken.

Judges who have been growers have the advantage of knowing what varieties are difficult to produce good form. Stand A and B are then inspected, one flower at a time, and the distance of the one above its rival is noted down in points. If they are considered equal neither scores at the finish, and the two stands should be left together till the next stand of twelve blooms is compared, then before separating them give a point for colour and freshness, which is easily determined when the stands are side by side. I do not say that “Sadoc’s” way is wrong, having tried it with others; but it means trusting to his mind’s eye to carry size, colour of say twenty-four or forty-eight blooms to a distance, and in my opinion the surest method is having the two objects side by side if possible, and I am not alone in preferring this way to the other when stands are close in merit.—JOHN LAMBERT, *Powis Castle Gardens.*

## GRAFTING CHRYSANTHEMUMS ON ANTHEMIS FRUTESCENS.

MONS. J. EVERAERTS writes from Antwerp: “I send you the January number of the ‘Revue de l’Horticulture Belge,’ thinking that the article on grafting Chrysanthemums on *Anthemis frutescens* might interest you, and perhaps some of the readers of your Journal. We have ourselves tried the experiment, and thus far have a hopeful opinion about the future of the new method.” We are much obliged to M. Everaerts for drawing attention to the article, which is by M. Alexis Callier, and is of much interest. Many readers may be glad to know what the Belgian horticulturists are doing with *Anthemis* (*Chrysanthemum*) *frutescens* as a stock for Chrysanthemums, and we therefore translate the article.

“The ‘Revue’ asks me for some information on the subject of grafting Chrysanthemums on the *Anthemis*. I have nothing to say as to the results obtained. Some grafted plants were seen at the November Exhibition in Ghent. They were, however, only the results of one trial, and I am convinced that they may be greatly improved upon. I have been asked how I discovered the new method. It is very simple, I did not find it, and it is not new. I have imitated the Chinese, who use it readily, as witnessed by Fortune, reported by Burbidge (*The Chrysanthemum*).

“The idea came to me to follow their example in observing the great vigour developed by certain *Anthemis* under the influence of manure. The *Anthemis* being hardy, or, at least, conserving its trunks and stems, the Chrysanthemum ought to profit, by means of the graft, by the superabundance of sap in the stock, and above all of the strength already acquired by the latter when the shoots of the Chrysanthemum have only just commenced to push. This strength might represent the work of weeks, months, or even years. In two years the *Anthemis*,



submitted to high culture, is a small tree. In the south of France, where it grows out of doors and withstands the winters, it is not rare to meet with specimens of a size unknown in our more northern country.

"No doubt the graft would succeed with all the varieties of *Anthemis frutescens*, but there is an advantage in choosing as stocks those of which the growth is the most rapid. From this point of view no variety surpasses *Etoile d'Or*, little cultivated by us, but nevertheless known by its beautiful flowers, resembling large yellow *Marguerites*, which reach us during the winter from Nice and Cannes. Next to this is another variety of which the flowers are like large white *Marguerites*, long extensively cultivated on balconies, but of which I do not know the name [possibly *Halleri maxima*]. With the one and with the other variety I have obtained nearly equal results. In all probability some *Chrysanthemums* have a greater affinity for one *Anthemis* than for another, as some *Roses* prefer the *Manetti* or the *Multiflora de la Grifferaie* for a stock. It is a subject for study.

"It may be said at once that in our first attempts, or rather in our early gropings, all varieties of *Chrysanthemums* did not lend themselves equally to the graft as we practised it. More skilful culture than ours, and the common efforts of those who will interest themselves in the matter will show, we are inclined to think, that there are few really refractory. We have succeeded with the following varieties:—*Val d'Andorre*, *Paul Fabvre*, *Ernest Fierens*, *Mélanie Fabvre*, *Etoile de Lyon*, *Hiver fleuri*, *Mdlle. Paul Dutour*, *Madame Eliza Neyt*, *Source d'Or*, *Cinna*, *Cavour*, *Marie Fierens*, *Sirius*, and *Hermann*. We have failed with *Mrs. Parnell*, *George Glenney*, *Mrs. Dixon*, *Edwin Molyneux*, *Mrs. Haliburton*, *Vital* (sown 1890), *Marsalia*, *Maiden's Blush*, *Osaka*, *Guernsey Nugget*, and *Madame C. Audiguier*. Even in their case the union took place, but was more or less spoiled subsequently, as testified by the feeble growth of the plant.

"I invariably grafted *à la Huart* or *à la Pointoise*,\* with a ligature of raffia, covered or not with mastic. I did not perceive any difference by the use of the mastic. The union of the stock and scion should be made as exact as possible—bark against bark—by choosing growths of the same size. The plant should be kept close under glass for about three weeks, a little more or less according to the caprices of the graft, giving air gradually as if in the case of cuttings. The temperature should be 12° to 15° C. (about 53° to 59° Fahr.) by artificial heat; 15° to 20° C. (59° to 68° Fahr.) by natural heat. Shade against the direct action of the sun if the rays have acquired much force. Leave the ligature for some time in order to force the stock and scion to penetrate each other reciprocally. As the plants develop successive repottings will, of course, be necessary.

"The period at which grafting may be performed is from the commencement of December to the commencement of May. It depends on the resources at disposal, and the results desired. Early and late grafting both have advantages. In grafting early on an *Anthemis* having only a few branches a small number of *Chrysanthemum* shoots will suffice to produce a very large plant by the following November. A plant of *Ernest Fierens* was grafted in January on an *Anthemis* struck from a cutting in August, 1891; the stock bore only nine grafts, but, thanks to attentive pinching, it gave more than 300 flowers. But in grafting late, in March for example, the operation is more sure. None of the delicate attentions are required by the plants, such as they need in the winter months. On the one part an *Anthemis* may be allowed to push, which will grow like a weed, and as many stems as possible should be induced to push by pinching. As its growth is much more vigorous than that of the *Chrysanthemum*, the multiplication of its stems proceeds far more quickly; in spring the stock is full of health and vigour. At the same time as many shoots of *Chrysanthemums* are secured, either by cuttings or by allowing the old stools to push, as will be required for grafts, and an endeavour is made to have them as vigorous as possible. The moment come—in March, for instance, the stock and scion are both in full vigour, and the ulterior development of the plant can only be favourable. The rapidity of growth of the *Anthemis* is such that grafts effected in April on *Anthemises* raised from cuttings in January give larger plants than those resulting from *Chrysanthemum* cuttings struck in November. But naturally the larger the *Anthemis* the larger the grafted plant. In taking an *Anthemis* of one or two years, and placing on it in February or March 100 grafts, or even more, specimens may readily be produced having 1000 or 2000 large flowers, and a diameter of 3 or 4 yards. To arrive at this result it is necessary to take timely steps, preparing the stock on the one side, and a sufficient number of grafts on the other.

"What will happen with the grafted plants which have flowered in the second year? That is still the secret of the future. I incline to think that they will push and flower again. All those which I preserved emitted shoots just above the graft, exactly like those produced round the stool of a *Chrysanthemum* after flowering. These shoots, profiting by the sap of the *Anthemis*, ought, I think, to develop normally. I will speak about this another year."

Perhaps some of our *Chrysanthemum*-growing readers will experiment in the direction indicated by M. Callier, and communicate the results in due course. There is still abundant time for the operation to be performed.

\* This graft requires that the stock be cut at its extremity *en biseau*, so as to exactly join the two cuts. This biseau is hollowed like a V so as to receive a graft, of which the extremity is cut so as to fit the cavity in the stock.

## SCOPOLIA FLADNICHIANA.

THIS comparatively little known plant was exhibited at the Drill Hall on Tuesday, March 14th, by Messrs. G. Paul & Son, The Old Nurseries, Cheshunt, and was adjudged an award of merit by the Floral Committee of the Royal Horticultural Society. It is rather a robust growing herbaceous plant, with bright green leaves, and pretty bell-shaped pale yellow flowers.

Regarding *Scopolia Fladnichiana*, Messrs. Paul & Son write:—"This plant seems perfectly hardy on the summit of our rockwork. It is a Central European plant—Hungarian or Bohemian—and blooming as it does early in March with flowers apparently frost-proof it looks like a



FIG. 49.—SCOPOLIA FLADNICHIANA.

valuable addition to the hardy spring flower garden." Fig. 49 represents the flowers and foliage.

## PRESTON SPRING SHOW.—MARCH 15TH AND 16TH.

THE fifteenth Show of flowering spring bulbs and plants and cut flowers, held under the auspices of the Preston and Fulwood Horticultural Society, took place in the Public Hall, Preston, on the above dates. This was the finest Exhibition held since its formation. There were ten more exhibitors this year than last, and the number of entries was 363, an increase of fifty-six.

In the amateurs' class Mr. J. B. Dixon was first for twenty-four single Hyacinths; Mr. Payne taking similar honours and twenty-four doubles in the nurserymen's class. The double Hyacinths, though well shown, were not quite so good as we have seen them. The Tulips were fine, but not fully developed, requiring a few more days to bring them to perfection. The Deutzias were remarkably good, especially those shown by Mr. J. B. Dixon, and being the most meritorious, was awarded a silver medal. The Lilies of the Valley made a grand show. The Narcissi were not so well represented as last year, although there were some fine examples amongst them. Primulas and Cyclamens made a fair display.

There were several beautiful groups of plants staged for effect in the nurserymen's class. The first prize was taken by Mr. Payne of Fulwood, whose group contain many spring flowering plants, including a fine



Imantophyllum, whilst the background was composed of large Palms and Ferns. The first prize group in the amateurs' class was shown by Mr. J. B. Dixon, Ashton House, Ashton. The latter exhibitor was also first for six Azaleas, very fine and fresh examples. There was a great falling off in the show of Orchids, owing chiefly to the breaking up of a local Orchid establishment.

The wreaths, crosses, brides' and hand bouquets were excellent, and the competition was keen. Mr. Troughton was first in each class, the arrangements were splendid, being light.

For twenty pots of miscellaneous bulbs in flower, distinct, Mr. Frisby, gardener to Miss Ffarington, Worden Hall, Leyland, was first; and for six pots of Roses, first, Mr. Williams, gardener to J. Whitehead, Esq., Priory, Penwortham. Mr. Lamb, gardener to R. Smith, Esq., Longridge, was first for six dinner-table plants. Mr. Sharples, gardener to J. B. Dixon, Esq., Ashton House, Ashton, was also first for Azaleas, Hyacinths, Cyclamens, and Cinerarias.

There was a fair show of collection of vegetables, six varieties, Miss Ffarington, being first. The cottagers' class was well represented. The Judges were Mr. Bardney of Osmaston Manor, Derby, and Mr. McKellar of Abney Hall, Cheadle.

### GRASSENDALE AND AIGBURTH SPRING SHOW.

THIS Show, held on Saturday last, proved most successful. The exhibits were not only more numerous, but they were of excellent quality. Orchids were well shown, the Cattleyas making a grand show. Mr. A. Bryan, gardener to A. Garnett, Esq., staged a fine variety of Cattleya Trianae; Mr. J. Grant, gardener to W. S. Gladstone, Esq., Angraecum sesquipedale. Mr. J. Madeley, gardener to W. C. Atkinson, Esq., had a choice plant of Cypripedium Rothschildianum with five flowers; other Orchids of note being the quaint Oncidium undulatum, Cymbidium eburneum, and a number of Coelogyne cristata.

Hyacinths were good. For nine distinct, six distinct, and six pots three bulbs in a pot, the first prizes went to Messrs. J. Agnew, gardener to Mrs. Watts; John Kelly, gardener to R. Singlehurst, Esq.; and G. Leadbeater, gardener to Mr. W. J. Davey, Esq. Tulips were a very strong feature. The prizes for six singles and the six doubles went to Messrs. Agnew and Grant, the latter securing the prize for six pots of Narcissus. The prize for Amaryllis went to Mr. J. Pinnington, Aigburth, and that for two stove and greenhouse plants to Mr. G. Leadbeater for a well-flowered Azalea and a finely coloured Croton. Mr. Bryan had the best single specimen, and also won with Orchids.

For two Ferns Mr. J. Bounds, gardener to L. L. Jones, Esq., was first with Adiantum scutum and Microlepia hirta cristata, and Mr. G. Leadbeater staged a fine Davallia Mooreana 7 feet in diameter. He was also first for three Azaleas and a charming Rhododendron Gibsoni. For two Azaleas Mr. J. Bounds was first; the prizes for one Azalea and two hardy Rhododendrons were taken by Mr. J. Kelly. Mr. Bryan took first honours for two pot Roses, one bouquet, and a charming variety of six stove and greenhouse cut flowers. For three forced hardy plants, four table plants and three Carnations in pots, and six trusses of Roses Mr. J. Bounds was placed first. For three Spiraeas and four pots of Lily of the Valley Mr. J. Madeley took first honours.

Primulas and Cyclamens were in grand condition. Mr. E. Taylor, gardener to E. Pryor, Esq., was first prize for four Primulas, and Mr. T. Ankers, gardener to W. B. Bowring, Esq., in the class for Cyclamens; Mr. Ankers also secured first position for one Palm, one Mignonette, two hardy Azaleas, two Callas, and four pots of herbaceous plants. Mr. P. Green, gardener to L. H. Macintyre, Esq., was placed first for one hardy Azalea, whilst for Cinerarias and two Palms the prizes went to Messrs. Agnew and G. Burns.—R. P. R.

### ROYAL BOTANIC SOCIETY.—MARCH 22ND.

THE first Show of the Royal Botanic Society for the present year was more favoured in respect to weather than many of its predecessors. The Exhibition did not appear to be quite so extensive as usual, although it was of the usual bright and diversified character.

Hyacinths were, as usual, finely shown by Mr. Douglas, gardener to Mrs. Whitbourn, Ilford, the spikes being large, well balanced, and the foliage commendably dwarf. Electra, King of the Blues, Vuurbaak, Koh-i-Noor, and La Grandesse were the best plants. Mr. H. Eason, gardener to B. Noakes, Esq., was second with fair trusses; and Mr. R. Scott, gardener to Miss Foster, third. Mr. Douglas was also to the front with Tulips, which were in beautiful condition when judged, the plants being dwarf, but the flowers large, Ophir d'Or, White Joost Van Vondel, Keezer's Kroon, and Proserpine being splendid, the latter especially. Mr. Scott was second with fine flowers, and Mr. Eason third. Mr. Douglas won again with Polyanthus Narcissi, Mr. Scott following. Messrs. H. Williams & Son won in the trade class with twelve Hyacinths, Mr. W. Morle being second. Mr. Douglas won with Crocuses in pots, brilliant masses of colour; Mr. Morle second, and Mr. Scott third. The prizes for Lilies of the Valley went to Messrs. H. Williams & Sons, Morle, and Scott in the order named.

Greenhouse Azaleas were exhibited in good condition by Mr. Scott, who was placed first. His plants were not large, but were healthy and well bloomed. Mr. Eason was second. Mr. Douglas scored his customary victory with Deutzias, the plants being wreathed in bloom, and Mr. Eason was a good second. Messrs. G. Paul & Son were the only exhibitors of six Roses, and were awarded the first prize for well flowered plants of Beauty of Waltham, Innocente Pirola, Magna Charta, Violette Bowyer, Celine Forestier, and Alphonse Soupert. Mr. Ware won with a

collection of hardy herbaceous plants, amongst them being Doronicum plantagineum excelsum, Spiraea japonica multiflora compacta, Ficaria grandiflora, Anemone pulsatilla, Primula cashmeriana, Epigaea repens, and Megasea purpurascens. Messrs. Paul & Son, Cheshunt, and Mr. Douglas were equal first with Amaryllis, the plants being very strong and carrying fine flowers in each case. Mr. Mowbray, gardener to Major the Hon. H. C. Legge, Fulmer, Slough, won with twelve pots of Cyclamen, the plants being splendid examples, large and densely furnished with bloom. Better are rarely seen. Mr. T. Prestridge was second, also with excellent material; and Mr. D. Phillips, gardener to R. W. Mann, Esq., Langley Broom, Slough, third. Mr. Douglas was the only exhibitor of Freesias, and was placed first for some large pots, well furnished with flowers.

The miscellaneous exhibits formed, as usual, a prominent feature. Messrs. Cutbush & Son had a brilliant display of greenhouse and conservatory plants, well grown and full of bloom (silver medal). Messrs. B. S. Williams & Son had a large and beautiful group, comprising a finely grown collection of Hyacinths and Tulips, Polyanthus Narcissi, Lilies of the Valley, Clivias, Rhododendrons, Orchids, and a few new plants, amongst which were Caraguata cardinale and the white Anthurium Williamsi (large silver medal). Messrs. Paul & Son, Cheshunt, had a group of new Roses and Lilacs. Amongst the former was the beautiful H.P., Paul's Early Blush, a lovely satiny blush with a delicate perfume. Jeannie Dickson was also conspicuous. Léon Simon was one of the finest of the Lilacs (large bronze medal). Messrs. H. Williams and Sons, Finchley, had an extensive display of Hyacinths, Tulips, and Daffodils (small silver medal). The St. George's Nursery Company were represented by a fine group of Cyclamens (small silver medal). Mr. T. S. Ware had a display of hardy plants and bulbs, comprising Primulas, Saxifragas, Chionodoxas, and Daffodils (bronze medal). Mr. T. Prestridge had a small group of well grown and finely bloomed Cyclamens (large bronze medal). Mr. H. Eason had some pots of Lachenalias full of flowers (certificate). Messrs. J. James & Son had a collection of their beautiful Cinerarias, the merits of which are well known (small silver medal). Messrs. J. Veitch & Sons sent several new plants, these including the handsome and graceful Pandanus Baptisti, also a number of Amaryllis, to which we shall shortly refer more fully. Mr. John Odell had a small collection of Cyclamens (large bronze medal). Messrs. Barr and Son contributed a bright group of hardy flowers, chiefly bulbous, comprising Sisyrinchium grandiflorum album, Iberis stylosa, and May Daffodils (bronze medal). Messrs. W. Paul & Son, Waltham Cross, sent a dozen boxes of cut Camellias, a beautiful display, and also a group of new Roses, in which White Lady and Corinna were conspicuous (small silver medal). Messrs. Ryder & Son exhibited floral decorations (commended).



### HARDY FRUIT GARDEN.

**Strawberries.**—Established beds of Strawberries will need some attention now in clearing away old, blackened, ragged foliage which has suffered from the effects of frost and damp. At the same time remove the strawy remains of the autumn mulch if it be sufficiently decomposed and its virtues have been abstracted by the soil through the action of the winter rains. The operation is best performed in dry weather, and while doing so carefully lift with a fork any strong-rooted perennial weeds which may be present; weeds of annual growth destroy with the hoe. In clearing the ground use an iron rake, but avoid severing the matted fibrous roots round the crowns.

**Applying Spring Dressing.**—Apply immediately round each a good dressing of soot and lime. This will act in a most effective manner in destroying slugs, or at least in reducing their numbers, the dressing, after the first rain, also proving of benefit to the roots. A similar dressing, or of soot alone, may be given to recently formed plantations. Soot is an excellent stimulant, giving tone and colour to the foliage, and increasing the size of the fruit. The present time, or very shortly, is suitable to give a general mulching between the rows of fairly fresh stable manure, containing a moderate amount of straw. By the time the fruit is ripe the latter will have become so consolidated and washed clean that it will form an excellent base for the fruit to rest upon.

**Planting Strawberries.**—Strawberries can now be removed from nursery beds, and planted permanently in rows 2 to 3 feet apart, the plants themselves in the rows being 18 inches to 2 feet apart. The exact distances must be regulated according to the richness of the soil and the vigour of the varieties. The Strawberry likes a deep, well enriched, holding soil. The best preparation should, therefore, be afforded in manuring and digging the site selected. If such preparation has been given to the ground earlier in the season all the better, particularly in light soils, where before planting compression of the surface is necessary in order to ensure firmness. When the rows are formed at the wider distances it is a good plan during the first year to grow a single row of Lettuce, or plant autumn-sown Onions between each. This can be done without detriment to the Strawberries, and there is no waste of ground. In this case a general mulch is not



desirable, as it will be necessary to frequently use the Dutch hoe for maintaining a loose surface.

**Protecting Fruit Blossom on Wall Trees.**—It is well to have all the material for effectively protecting trees ready to hand; if possible adjusted in position, so that it can be conveniently extended over or in front of the trees when necessary.

**Methods of Protecting.**—All walls against which choice varieties of fruit trees are planted ought to be furnished with a projecting coping either of wood or glass. The advantage of having a projecting coping is found in the ease with which material can be fixed, drawn up and down, or on one side as necessary. Woollen netting or tiffany is the best material for protecting, and where a coping exists a series of brass rings should be fixed to the upper edges of the material used and be placed on an iron rod secured to the edge of the coping. Another set of rings at the lower end also running on an iron rod fixed 18 inches or 2 feet from the ground on convenient uprights fastens that part. The whole is easily extended or folded as required, slight wooden uprights being placed securely from the coping to the ground for fastening the material to when folded. In the absence of coping poles of sufficient length to reach the top of the wall, standing out at the foot well clear of the trees may be used, placing them 6 feet apart. On these stretch tiffany, frigi domo, cotton netting, double or treble fish netting, or pilchard netting. Protecting material should stand clear of the trees at least 3 inches.

**Protecting Pyramids and Espaliers.**—The best way of protecting pyramid trees is to fix three poles round each, equidistant, firmly fixed at the foot, splicing them together at the top well clear of the trees. The protective material must be wound round tightly, not closing up the apex, nor carrying it to the bottom within 2 feet. Espaliers in the open may have a pole arrangement on each side, the tops being fastened above the trees. In cases where the trees are close to walks the base of the poles may be steadied by being fixed in pots, small tubs, or boxes filled with soil, ashes, sand, &c., but usually the poles on one side can be made firm, which will help to hold the others. By stretching frigi domo from each support the trees will be effectually guarded from frost destroying the blossoms.

#### FRUIT FORCING.

**Vines.**—*Earliest in Pots.*—Those started last October to early in November have the Grapes at the colouring stage, and require supplies of tepid liquid manure to insure well-swelled berries. A little air constantly aids the ripening process, but an arid atmosphere should be avoided by damping available surfaces occasionally. Do not curtail the laterals before the fruit is finished, when they may be reduced, especially if the Vines are required for table decoration and have been allowed to root from the pots, the simultaneous reduction of the roots and laterals being necessary to preserve the remaining foliage in good condition.

**Early Houses.**—The Grapes will soon proceed with the colouring process, and, as they swell considerably during that stage, the Vines should be well supplied with tepid liquid manure. The border may also be mulched with partially decayed, well sweetened manure, an inch thickness sufficing. A good watering and the mulching will generally be sufficient for the Vines until the Grapes are cut, but the soil must not be allowed to become dry so as to distress the foliage, for that should be preserved in a healthy condition, its retention being essential to prevent premature growth. Continue damping at closing time until the Grapes are well advanced in colouring, and maintain a circulation of warm air constantly. Keep a good spread of foliage over Black Hamburgs; white Grapes require more light.

**Succession Houses.**—Disbudding, stopping, and tying the shoots must be attended to, for work of this kind falling into arrear cannot be satisfactorily brought forward. Stop the shoots one or two joints beyond the show of fruit where the space is limited; but where the restriction of space is less allow more extension to the shoots and laterals. The shoots may be pinched at three or four or more leaves beyond the bunch, and the laterals allowed to extend until the space is fairly occupied. Then keep them pinched, not permitting growth to be made that must afterwards be reduced in quantity. Vines in flower should have a circulation of warm rather dry air, and a temperature of 65° to 70° at night for Black Hamburgs and similar varieties; Muscats require a night temperature of 70° to 75°, and 10° to 15° more by day with sun. Shy-setting sorts should have the bunches brushed over with a camel's-hair brush, so as to rid the stigmas of the glutinous substance and the adhering "caps" about the time the blossom is fully expanded, choosing a warm part of the day after the house has been rather freely ventilated. Any varieties deficient of pollen may have it applied, collecting it from those that afford it freely. Free-setting varieties may be thinned as soon as the berries are formed, but the shy setters ought not to be thinned until the properly fertilised berries are taking the lead.

When the Grapes have been thinned and are fairly swelling, supply tepid water or liquid manure. Top-dressings of approved fertilisers are highly beneficial, applying them after the soil has been made moist, and washing in lightly. A light mulching of sweetened lumpy manure is useful, provided it is kept moistened by damping occasionally, especially at closing time. Admit a little air by the time the sun acts on the house, and increase it liberally as the temperature rises, so as to secure sturdy wood and thick leathery leaves. Close early, with plenty of atmospheric moisture, so as to run the heat up to 85° or 90° by the sun's agency, and allow the night temperature to fall to between 60° and 65° by the morning.

**Late Houses.**—The Vines started at the end of last month or beginning of this will now be swelling their buds, and should be syringed rather freely in the morning and at closing time, striving to secure a good

break by closing the house with a rather humid atmosphere of 75°. Young Vines must be brought into a horizontal position or lower, otherwise the sap rushes to the upper part of the canes and causes the buds to push unevenly. Moisten inside borders by watering as necessary, and on outside borders place a little protective material to prevent chill from snow and frost.

Houses of the late varieties not yet started should be set to work with as little delay as possible, for they require a longer season of growth than is sometimes given them, as when they start naturally, to produce highly finished Grapes, and such as will keep well. Syringe the rods several times a day, and maintain a moist atmosphere by damping the floor and border every evening. The night temperature should be kept at 50° to 55°, the latter by artificial means in the daytime, and 65° by day from sun heat.

Where Black Hamburg Grapes are required late the Vines may be permitted to break naturally, then the Grapes will be fit for thinning early in June, and they will ripen in September. When ripened early the berries are liable to lose colour and to shrivel by hanging, which is a great defect in Grapes, and is best prevented by a good, but not excessive, spread of foliage, and a properly moist condition of the soil, with sufficient ventilation to prevent damp.

**Ripe Grapes.**—Those in the Grape room have kept upon the whole satisfactorily, they having required more air than usual, perhaps due to the changeableness of the weather. Lady Downe's has proved, as usual, the best keeping Grape, taking colour, plumpness, and quality into consideration. Gros Colman also has preserved its freshness, and the quality is so improved by keeping as to be little inferior to Black Hamburg. Examine the Grapes twice a week for decayed berries, remove empty bottles, and replenish others with water as required.

**Figs.**—*Earliest Trees in Pots.*—Early Violet and St. John's varieties that were started in gentle bottom heat in November are now beginning to take their last swelling of the fruit for ripening, and to insure flavour a drier condition of the atmosphere and a higher temperature, with increased ventilation on fine days, is desirable. The larger fruited varieties, however, have not the fruit sufficiently advanced to admit this being done without prejudice to their crops. Anything approaching dryness at the roots must be avoided, yet lessened supplies are needed than when the fruit is swelling. Brown Turkey and similar varieties should have good supplies of tepid liquid manure twice a week, and the top-dressings be replenished, lumpy manure absorbing moisture when the trees are syringed, and gives off genial vapour for some time afterwards. Syringe twice a day when fine, once only when the weather is dull, the second syringing being given in time for the foliage to get fairly dry before night. Maintain a night temperature of 65° when mild, 70° to 75° by day, and a heat ranging between 75° and 85° with sun. Stop and thin the side shoots, as Figs enjoy light, full exposure to sunshine, training terminals forward where space admits or there is need to preserve the symmetry of the trees, always guarding against overcrowding.

**Succession Houses.**—Trees in borders require liberal supplies of liquid manure or copious waterings through a good, but not heavy, mulching of manure. Syringe twice a day unless dull, when once suffices, or not that when the weather is close and moist, but damp the paths and walls frequently, and again moisten the mulching when it becomes dry. This is better than keeping it constantly saturated. Ventilate freely in the early part of the day, but maintain a temperature of 75° to 85° from sun heat through the day, and close with a brisk heat and plenty of moisture about three o'clock in the afternoon. Maintain a night temperature of 60° to 65°, and 65° to 70° on dull days, with a little ventilation.

**Late Houses.**—Figs ripen one crop in a season in unheated houses, but the late varieties Nebian, Col di Signora Bianca, and Agen require fire heat to ripen the fruit well. The house must have a full exposure to the south. Well-drained, narrow, inside borders are best. The growths should be trained about 16 inches from the glass. Prune the trees and dress them with an insecticide, being careful not to injure the embryonic Figs, nor break the points of the shoots. Supply water so as to thoroughly moisten the soil, and keep the trees dormant as long as possible; but when they begin to grow afford generous treatment, admitting air soon, and closing early in the afternoon so as to husband the sun heat. Avoid, however, a close atmosphere, as that hinders the proper formation of the foliage, and too hasty treatment may cause the fruit to fall.

#### PLANT HOUSES.

**Crotons.**—Good heads that were notched and mossed some time ago will be sufficiently rooted for taking off and potting singly. Place them into 5 and 6-inch pots, and put in the propagating or other frame until they are established. The old plants from which heads are removed may, if stock is needed, be kept for yielding side shoots, otherwise they should be cut close back. Repot young plants that need more root room without delay. Syringe these plants freely and maintain a close warm atmosphere. No shading is needed; if the plants are grown in mixed houses of plants they should be arranged at one end or in any position where they can enjoy plenty of light, while the others can be shaded when occasion requires.

**Dracænas.**—Those that have been mossed may be taken off and placed into pots suitable for the purpose for which the plants may be required. Narrow-leaved kinds are most useful in from 5 to 7-inch pots for table and other forms of decoration. Give the plants similar treatment advised for Crotons until they are well rooted, afterwards shade them from bright sunshine. These plants will bear exposure to the sun; but they colour too highly, and the ends of the leaves



are very liable to decay. A fair amount of light is necessary to develop the fine colour of many varieties. The main portion of the stem may be cut into pieces and placed in pans if stock is needed. *D. Grielfoylli*, when raised from root cuttings, have green lower leaves, which detracts from the effectiveness of the plants. To have this variety in its best condition well-coloured heads should be re-rooted. Plants of *D. Goldiana* that have become too tall may have the tops taken off and inserted in 4 or 5-inch pots. When taking off the heads cut to where the wood is moderately soft. When this is done, and the pots are plunged in brisk bottom heat, they root quickly without losing a single leaf. A few of the eyes below where the head has been removed may be inserted with a leaf attached; these soon root, and form neat plants. For stock the old stems should be retained and allowed to break, when the side shoots can be taken off and rooted. *D. gracilis* may be treated in the same way.

**Poinsettias.**—Cut close back all old plants that it is intended to retain for another year. These if placed in an intermediate temperature will soon break into growth, when shake the old soil from the roots and repot the plants. Where it is necessary to increase the stock insert portions with two joints of well ripened wood in sandy soil in thumb pots and plunge them in the propagating frame. Rooting cuttings of ripened wood is the quickest and best method of raising a stock of these plants. As soon as these cuttings are well rooted they should be given an intermediate temperature so that sturdy growth will result.

**Euphorbia jacquiniæflora.**—Plants that have enjoyed a good rest may be placed into heat until they break into growth. When they have made growths 2 inches or a little more in length remove the plants to cool moderately airy quarters to harden the cuttings, when they may be taken off with a sharp knife and inserted in sandy soil and covered with bell-glasses in brisk heat. Do not place them in the propagating frame. If the cuttings are inserted in a soft condition when produced in brisk moist heat nearly every one will fail, but when well hardened the majority will root.

**Justicia flavicom.**—Cuttings of this useful plant should now be plentiful, and they root freely in sandy soil in the propagating frame. Insert each cutting singly so that the plants can be grown afterwards without a check. If sufficient cuttings can be obtained at once the old plants may be cut back and then allowed to break into growth. When in this condition reduce the old balls carefully, and repot the plants, placing them again in the same size pots.

**Begonia hydrocotylifolia.**—Plants that have done flowering may have all the old leaves removed. About 4 inches of the stem should be inserted as cuttings in small pots, for they root freely in sandy soil in a vinery or any house that is kept warm. If a large stock is needed the stem may be cut into lengths of 1 inch and placed in thumb pots. In the conservatory it is very effective with its light spikes of pink flowers rising above other plants. When in brisk heat the flowers are of the palest description, and the plant is not half so effective as when it is developed under cooler conditions.

**Acalyphas.**—Tops that were inserted as previously advised will be well rooted and should be placed into 5-inch pots. Grow these in brisk heat fully exposed to the sun, when their foliage will colour splendidly. For conservatories that are not kept too cool these *Acalyphas* plants will certainly replace *Coleus*, inasmuch as they will stand in these structures all the summer. Side shoots root freely in handlights in heat.

**Caladiums.**—Grow the earliest plants at present fully exposed to the sun and give a little air daily. This is necessary if the plants are to be employed in conservatories and other structures that are not kept close. When grown under moderately hardy conditions they stand well in rooms and in cooler houses after the middle of June. Plants that have been kept at rest may be started into growth without delay.

**Palms.**—Light shade should be given these during bright sunshine. Clean any plants that need it, and syringe freely to keep spider and thrip well in check. Pot any plants that need more rootroom. The majority of these plants do well in good loam and coarse sand, with a little artificial manure applied occasionally to the surface. Young plants may have one-third good leaf mould incorporated with the loam, while the more delicate-growing kinds prefer at least half peat. Maintain a moist atmosphere, and a temperature at night of 60°. If lightly shaded during bright sunshine the ventilators for the present may be kept close.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### THE WEATHER.

THE weather has continued cold ever since January closed, and there has not been much opportunity to feed strong hives, and none for weak ones. It is a repetition of the past; bees will feed in January when they will die in March. The latter is a treacherous month for bees, and they should be kept quiet and not induced to leave their hives on any pretext whatever. They have obtained no good from any of the spring flowers, and the *Crocus* have never opened their petals. The *Panics*, with few exceptions, are the only bees here that have carried pollen to any extent. I have no wish to see my bees much on the wing until the temperature rises to 55°, and 44° is the highest it has reached since March

came in. I know there is no damp about my hives to injure them, consequently no dead bees upon the floors, as is the case with those having solid ones; and as the doorways are all narrow there is no draught to further chill the bees, which deters breeding, nor lack of food which has the same effect, and often ruins the hives and the prospect of the bee-keeper.

#### FEEDING.

Except in special cases during the autumn I have abandoned all top feeders. They are more troublesome than under fountains and scoops, and are liable to cause a draught. Bees will feed readily from under feeders, when they reject syrup in upper ones. With the use of under feeders the warm covering on the top of the hive is left intact, and no unnecessary cooling the temperature of the interior of the hive takes place or is permitted after October or November, up till the end of May, or perhaps later.

I have a strong aversion to feeding during the spring months, but it would be extremely foolish to advise against it in cases where the bees may be starving. Feed all such hives at once, even although the weather be unfavourable. Remember, however, that "brood spreading," untimely, stimulative, and excessive feeding come under the same category, and is against profitable management. Bees require nothing to induce them to breed when in a healthy and normal state but Nature's sunshine and flowers from this time and onwards till the end of December, when they depend upon the stores within their hives. That it is necessary bees should be fed at certain times, when their stores are exhausted and Nature fails to give a new supply, I never denied; but I question the soundness of the advice that bees should be supplied with syrup in a manner and at times so much advocated by certain persons if bee-keeping is to be a success. The fact that bees never fed, whether in hives or in roofs of houses, give the largest yields of honey is sufficient evidence in favour of non-fed hives, and supports my argument.

#### HIVES.

The beginner is very apt to be led away by the teachings of unpractical persons. Experience is the most reliable teacher, and the information flowing from it is really valuable. Long experience has proven to us that deep, but narrow, hives are most suitable for bees, and are the most profitable. The ventilating floor in our hives is an inestimable gain in the saving of bees during winter, the manipulation and the management in the apiary at home, also when in transit to and from the Heather. I only ask your readers to consider for a moment the comfortable state of a well managed hive so equipped with its narrow doorway, contrasted with one having a solid floor lowered with the vain attempt to dispel the accumulated damp so fatal to bee life. Damp, moreover, is aggravated by having a wide doorway, and tends to kill the bees. It is impossible for them to keep up the heat of their bodies at a zero temperature when located in ill ventilated, draughty, and damp hives. The bees are restless when they should be in a state of repose and comfort.—A LANARKSHIRE BEE-KEEPER.



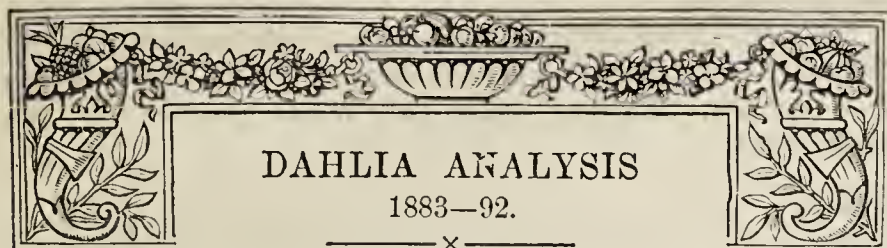
## TO CORRESPONDENTS

\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Netting Fruit Trees in Blossom (R. J. H.).**—The nets should hang distinctly clear, and not touch any portion of the trees. Perhaps no better guidance can be found than in the article on page 194 (March 9th). It is there stated that the foot of the supports for the nets to rest on may be 18 inches from the base of a wall 10 feet high, and 2 feet from the base of a wall 12 feet in height. You will also find in the article (page 195) the great value of glass or wood copings in addition to nets. Perhaps the mean between the two extremes you indicate, but do not define, will be the best solution of the problem. Be this as it may, we know from long experience that correct methods are clearly stated in the article referred to.





## DAHLIA ANALYSIS

1883-92.

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THE Exhibition held at the Crystal Palace in September last by the National Dahlia Society proved in many respects one of unusual interest, while all sections were well represented. The number of Show Dahlias fell somewhat short of the average; but the Fancies were more numerous than in any of the four previous years. The show of Pompons was also larger than at any of the recent exhibitions. The advance made by the Cactus and Decorative varieties during the last few years is truly surprising. In 1889 only seventy-four sets of blooms of these were staged, whereas at last year's Show there were 209, or nearly three times as many. The Singles also now add greatly to the interest of the display, and year by year are shown in larger numbers.

In the short statement which follows is given the total number of Show and Fancy Dahlias staged in competition at ten Crystal Palace Exhibitions, also the number of Pompon, Cactus, and Single Dahlias at the last four of them.

	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892
Shows ...	692	754	837	840	1106	1158	922	934	854	879
Fancies ...	269	425	355	387	350	315	274	283	286	340
Pompons	—	—	—	—	—	—	147	214	193	267
Cactus and } Decorative }	—	—	—	—	—	—	74	156	158	209
Singles ...	—	—	—	—	—	—	50	95	124	138

It might be thought that the longer the period over which an investigation of this kind extended the more reliable would be the averages obtained for the different varieties, and consequently the more satisfactory the relative positions assigned them in the tables. This would undoubtedly be the case but for the frequent introduction of new kinds, for the most promising of which places have also to be provided. In this way the older varieties either become gradually elbowed out of the lists altogether, or have to take in most cases inferior positions. When I had only the results of a few years before me these downward movements were not so apparent, but now that I have tables giving the exact numerical values for all the older Show and Fancy Dahlias for each of the last ten exhibitions, and those for the newer kinds since the time of their first introduction, the effects of these changes is at once seen.

In order to give each variety the position it is at the present time entitled to occupy, and the tables a more practical value, I have this year recalculated all the averages. Some few of the older sorts have an average given them for the full ten years, others for nine, eight, seven, six, and even five years as the case may be. In fact, the claims of each variety, whether new or old, have been decided entirely on its merits. Take, for instance, the Hon. Mrs. P. Wyndham, for some years the premier show flower, in the first half of the past decade, was shown on an average twenty-four times, but in the latter half only thirteen times. I could easily multiply examples of this kind, as there are comparatively few Dahlias which in the course of ten years do not show some signs of decline in public favour. On the other hand, varieties are occasionally to be met with which have been more

frequently shown in the second five than during the first five years. William Rawlings, for example, gives an average of eighteen for the first half of the period, and of twenty-six for the second half. Then, again, there are some kinds like Ethel Britton which show no decided indication either of advance or decline during the ten years. The above examples will sufficiently indicate how unfair it would be with these facts before me to treat all the varieties, as has hitherto been done, precisely alike. The averages have again been so calculated that the varying extent of the exhibitions does not in any way interfere with the comparable character of the results.

Of the seventy Show and Fancy Dahlias which secured places in the tables for 1883 only forty are to be found anywhere in the present lists. Moreover, no fewer than forty varieties are now tabulated in the analysis which were not even in existence when the first one appeared in 1883. Very considerable progress in the improvement of the Dahlias in both sections must, therefore, have been made during the decade under review.

In the table of Show Dahlias, Mrs. Gladstone (No. 1) for the seventh year in succession takes the premier place, and there is as yet no indication of its claim to that proud position being seriously contested. Of other established varieties, Mrs. Langtry (No. 6); Shirley Hibberd (No. 15); and Harrison Weir (No. 17) have seldom, if ever, been as numerous represented as at last year's exhibition. On the other hand, Henry Walton, Hon. Mrs. P. Wyndham, Prince Bismarck, Goldfinder, Mrs. Harris, and other good Show kinds were staged much less frequently than usual.

Of the 1889 varieties on the list Maud Fellowes (No. 10) and W. Jackson (No. 48) have made no advance on the positions they previously occupied. Glowworm (No. 42), however, was unusually well shown at the last Exhibition. There are four kinds introduced in 1890—John Hickling (No. 30), Alice Emily, and Duke of Fife (No. 34), and Crimson Globe (No. 46). John Walker, only distributed in 1892, on its first appearance takes a remarkably promising position at No. 13; while Arthur Rawlings of the same year will be found already as high as No. 30, and Arthur Ocock at No. 39.

Turning now to the Fancies, we still find Mrs. Saunders and Rev. J. B. M. Camm, both first sent out about twenty years ago, heading the list. They were in excellent form at the last Show, as were also Duchess of Albany, Frank Pearce, and H. Glasscock. Gaiety, on the contrary, has only once before been as poorly staged: while Mrs. N. Halls, Flora Wyatt, George Barnes, and Rebecca have also seldom been as badly represented.

The two 1889 Fancies, Mrs. J. Downie (No. 4) and Matthew Campbell (No. 5), well maintain the excellent places they secured in the last analysis. T. W. Girdlestone (No. 9), distributed in 1890, has greatly improved on its last year's position. Of the new sorts sent out in 1891 and 1892 Comedian (No. 23) and Mrs. Ocock (No. 23) were both creditably shown considering the recent dates of their introduction.

The following short lists have this year been arranged on similar lines to those drawn up for the Show and Fancy Dahlias, otherwise many of the best new sorts would have been excluded from them. The Pompon varieties readily lend themselves to tabulation, but neither the Cactus nor the Single kinds are as yet sufficiently established to allow of this being satisfactorily done. The gradual separation of the more or less true Cactus from the Decorative varieties by the National Society has been a step in the right direction, and has already borne good fruit in the introduction during the last few years of good new sorts of the true Cactus type, while several valuable additions to this popular section are, I understand, shortly to be sent out. Indeed, one of the most interesting features of last year's exhibition was the fine display of new Cactus Dahlias recently raised by Messrs. Keynes, Williams & Co.



POMPONS.—E. F. Junker, Darkness, White Aster (Guiding Star), Favourite, Grace, Isabel, Lady Blanche, Phoebe, Whisper, Admiration, Dora, Leila, Red Indian, Rosalie, Cupid, Fairy Tales, Gem, Golden Gem, and Mabel. Phoebe stands high for an 1891 variety, while Achilles of the same year was well shown, also H. E. Searle sent out in 1890.

CACTUS.—Duke of Clarence, Juarezii, Robert Mayher, Marchioness of Bute, Panthea, St. Catherine, Delicata, and Kynerith. The three last-named were only sent out in 1892.

Of the still newer varieties, Countess of Radnor and Bertha Mawley are of sterling merit.

DECORATIVE.—Mrs. Hawkins, Amphion, Empress of India, Honoria, Mrs. Douglas, Black Prince, Charming Bride, and William Darvil.

SINGLES.—Amos Perry, Miss Henshaw, Victoria, W. C. Harvey, Chilwell Beauty, Duchess of Fife, Florence Fisher, Marion Hood, Miss Roberts, Northern Star, and White Queen.—E. M., Berkhamsted.

## SHOW DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	Number of Times Shown in 1892.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	41.9	43	Mrs. Gladstone .....	1884	Hurst .....	Pale blush
2	26.3	23	William Rawlings .....	1881	Rawlings .....	Crimson purple
3	26.0	25	R. T. Rawlings .....	1886	Rawlings .....	Clear yellow
4	25.8	24	Harry Keith .....	1886	Keynes .....	Rosy purple
5	22.5	25	Colonist .....	1887	Keynes .....	Chocolate and fawn
6	20.4	34	Mrs. Langtry .....	1885	Keynes .....	Cream and crimson
7	18.3	16	Willie Garratt .....	1887	Garratt .....	Bright cardinal
8	17.2	20	James Cocker .....	1871	Keynes .....	Purple
9	17.1	13	Henry Walton .....	1873	Keynes .....	Pale yellow and scarlet
10	16.7	14	Maud Fellowes .....	1889	Fellowes .....	Pale pink, shaded purple
11	16.5	15	Ethel Britton .....	1880	Keynes .....	White and purple
12	16.4	19	J. T. West .....	1887	Rawlings .....	Yellow and purple
13	16.0	16	John Walker .....	1892	Walker .....	White
13	16.0	15	Mrs. W. Slack .....	1886	Keynes .....	Blush white and purple
13	16.0	12	Prince of Denmark .....	1881	Fellowes .....	Dark maroon
14	15.3	12	Hon. Mrs. P. Wyndham .....	1881	Keynes .....	Pale yellow and rose
15	14.9	17	Shirley Hibberd .....	1881	Rawlings .....	Dark crimson
16	14.2	16	T. J. Saltmarsh .....	1885	Rawlings .....	Yellow and chestnut
17	13.5	19	Harrison Weir .....	1883	Rawlings .....	Yellow
18	13.2	6	Prince Bismarck .....	1879	Fellowes .....	Puce
19	12.8	8	Goldfinder .....	1881	Fellowes .....	Yellow and red
20	12.2	2	Mrs. Harris .....	1873	Harris .....	White and lilac
21	12.0	14	Mrs. D. Saunders .....	1888	Rawlings .....	Pale, edged rose
22	11.4	12	Joseph Ashby .....	1879	Turner .....	Shaded orange
23	10.8	9	Miss Cannell .....	1881	Eckford .....	Cream and crimson
24	10.6	8	George Rawlings .....	1882	Rawlings .....	Dark maroon
25	10.5	6	Clara .....	1879	Rawlings .....	Rosy peach
26	10.3	4	James Vick .....	1881	Keynes .....	Purplish maroon
27	9.5	10	Crimson King .....	1887	Keynes .....	Deep crimson scarlet
28	9.3	3	Hope .....	1883	Keynes .....	Light rosy lilac
29	9.1	9	Mr. Harris .....	1881	Rawlings .....	Crimson scarlet
30	9.0	9	Arthur Rawlings .....	1892	West .....	Deep crimson
30	9.0	9	John Hickling .....	1890	Keynes .....	Clear bright yellow
31	8.8	6	Burgundy .....	1877	Turner .....	Dark puce
31	8.8	7	Flag of Truce .....	1868	Wheeler .....	White and lilac
32	8.6	8	John Standish .....	1872	Turner .....	Crimson
33	8.3	9	John Henshaw .....	1883	Rawlings .....	Ruby crimson
34	8.0	8	Alice Emily .....	1890	Keynes .....	Buff yellow
34	8.0	8	Duke of Fife .....	1890	Keynes .....	Rich cardinal
34	8.0	4	Imperial .....	1883	Keynes .....	Purple, shaded lilac
35	7.9	3	Earl of Ravensworth .....	1883	Harkness .....	Lilac
36	7.6	3	Mrs. Shirley Hibberd .....	1877	Rawlings .....	Cream and pink
37	7.5	3	Nellie Cramond .....	1888	Keynes .....	Purple, shaded cerise
38	7.3	4	John N. Keynes .....	1871	Keynes .....	Yellow
39	7.0	7	Arthur Ocock .....	1892	Rawlings .....	Reddish orange
39	7.0	8	John Bennett .....	1875	Rawlings .....	Yellow and scarlet
39	7.0	8	William Keith .....	1888	West .....	Dark plum
40	6.9	3	Mrs. F. Foreman .....	1884	Keynes .....	Lilac
41	6.8	5	Mr. Glasscock .....	1886	Rawlings .....	Purple
41	6.8	6	Sunbeam .....	1881	Fellowes .....	Buff
42	6.7	12	Glowworm .....	1889	Turner .....	Bright orange scarlet
43	6.4	6	Queen of the Belgians .....	1887	Rawlings .....	Cream and pink
44	6.3	5	Purple Prince .....	1888	Turner .....	Rosy purple
44	6.3	3	Vice-President .....	1868	Keynes .....	Orange
45	6.2	1	Herbert Turner .....	1873	Turner .....	French white
45	6.2	2	Mrs. Dodds .....	1881	Keynes .....	Blush and lilac
46	6.0	6	Crimson Globe .....	1890	Keynes .....	Crimson
47	5.9	2	Champion Rollo .....	1881	Keynes .....	Orange
48	5.5	6	Constancy .....	1878	Harris .....	Yellow and lake
48	5.5	3	W. Jackson .....	1889	Keynes .....	Rosy purple
49	5.4	5	Thomas Hobbs .....	1886	Keynes .....	Purplish rose
49	5.4	4	Walter H. Williams .....	1881	Keynes .....	Bright scarlet
50	5.3	8	Mrs. Kendal .....	1885	Rawlings .....	White and purple
51	5.2	3	Joseph Green .....	1881	Keynes .....	Crimson



FANCY DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	Number of Times Shown in 1892.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	22.7	26	Mrs. Saunders .....	1872	Turner .....	Yellow and white
2	20.7	23	Rev. J. B. M. Camm .....	1873	Keynes .....	Yellow and red
3	18.2	19	Duchess of Albany .....	1884	Turner .....	Orange and crimson
4	15.5	16	Mrs. J. Downie .....	1889	Turner .....	Orange and scarlet
5	14.0	20	Frank Pearce .....	1886	Rawlings .....	Rose, striped crimson
5	14.0	15	Matthew Campbell .....	1889	Keynes .....	Buff and crimson
6	12.8	12	Henry Eckford .....	1886	Rawlings .....	Yellow and red
7	11.8	6	Gaiety .....	1879	Keynes .....	Yellow, red, and white
8	11.1	11	Peacock .....	1877	Turner .....	Maroon and white
9	10.0	10	T. W. Girdlestone .....	1890	Keynes .....	Lilac and maroon
10	9.8	9	Chorister .....	1881	Keynes .....	Fawn and crimson
10	9.8	6	Mrs. N. Halls .....	1881	Rawlings .....	Scarlet and white
11	9.3	3	Flora Wyatt .....	1871	Keynes .....	Orange and red
12	8.6	6	George Barnes .....	1878	Keynes .....	Lilac and crimson
13	8.0	5	Rebecca .....	1883	Keynes .....	Lilac and crimson
14	7.4	8	Professor Fawcett .....	1881	Keynes .....	Lilac and brown
15	7.0	4	Hugh Austin .....	1881	Keynes .....	Orange and red
16	6.8	7	Dorothy .....	1888	Keynes .....	Fawn and maroon
17	6.7	8	Henry Glasscock .....	1875	Keynes .....	Buff and crimson
18	6.6	5	Egyptian Prince .....	1873	Keynes .....	Orange and red
19	6.3	2	Edmund Boston .....	1887	Keynes .....	Orange and crimson
20	6.0	4	John Forbes .....	1882	Keynes .....	Maroon
21	5.3	7	Prince Henry .....	1887	Fellowes .....	Lilac and purple
22	5.6	3	James O'Brien .....	1881	Keynes .....	Yellow and crimson
23	5.0	5	Comedian .....	1891	Keynes .....	Orange and crimson
23	5.0	5	Mrs. Ocock .....	1892	Rawlings .....	Yellow, crimson, and white

CHASSELAS NAPOLEON GRAPE.

IN your issue of March 22nd, page 229, you ask for an explanation respecting Chasselas Napoleon Grape for the benefit of the Grape-growing community. When I exhibited this Grape for a certificate before the Fruit Committee of the Royal Horticultural Society I did not represent it as a seedling Grape, or as a Grape of my own raising. I placed it before the Committee, as I considered it a Grape well worth their attention; and it was, I believe, unanimously awarded a first-class certificate. I herewith enclose a copy of my letter sent at the same time, which I think will conclusively prove that I have in no way attempted to regenerate this Grape.

[COPY OF LETTER SENT TO MR. BARRON.]

DEAR SIR,—I purpose placing before the Fruit Committee Chasselas Napoleon Grape for a certificate. It is, I consider, well worth their attention, as it is a good setter, keeps well, having been ripe since the beginning of September. It is also of very good quality. As it is growing here, not under the best advantages, being worked on an old Muscat stock, I think it would be a very fine Grape grown under more favourable circumstances. It is in the Muscat house which treatment seems to suit it.—Yours faithfully, GEORGE REYNOLDS.

P.S.—I cut bunches off the Vine late in November last year in excellent condition.

With regard to the origin of the Grape at Gunnersbury it was sent from Ferrières to my predecessor, Mr. Roberts. The vendors, Messrs. Cutbush & Son, who have procured the stock from me, inadvertently advertised it as a seedling of my raising through some misunderstanding on their part.

I have a Vine worked on the Muscat stock in the Muscat house here, and I have not experienced so much difficulty in setting it as there is with Muscats, and it has always carried a full crop. It has formed one variety, either in collections of five or ten varieties of Grapes when I have been exhibiting with as good results as most exhibitors. I shall be happy to show it anyone who is interested and so disposed to pay me a visit during the ensuing season, when they will be able to judge for themselves as to its cropping qualities.—GEORGE REYNOLDS, Gunnersbury Gardens, Acton, W.

LAST autumn at the Fruit Exhibition at Earls Court we noticed a white Grape exhibited by Mr. Reynolds of Gunnersbury Park Gardens; a great number of leading Grape growers observed that it was a fine white Grape, and would no doubt become a good

exhibition variety, and in the course of a few years would be amongst all collections upon the exhibition table. We neither saw nor heard anything further of the variety until we read Mr. Reynolds' advertisement in the "Gardeners' Chronicle" of February 18th, 1893, offering canes of Chasselas Napoleon Grape. As one of our representatives intended calling upon Mr. Reynolds during that week, we instructed him to endeavour to make terms with Mr. Reynolds to take over the entire stock for distribution, and an arrangement was come to subject to our confirmation. We wrote Mr. Reynolds immediately confirming the arrangement made, asking him to send full particulars of the Grape at once, as there was no time to lose, the season being far advanced for selling Vines. We received on March 1st full particulars of the Grape from him, and at once advertised in the press, as well as sending out circulars, giving full particulars of the Grape. Two or three days after we received a letter from Mr. Thomson of Clovenfords, saying that Chasselas Napoleon was a very old Grape and he had grown it thirty years. We at once wrote Mr. Reynolds enclosing Mr. Thomson's letter, and he replied, "You have made a mistake in advertising Chasselas Napoleon as a new Grape and as being raised by myself, as I procured the original from France." Immediately he informed us of this fact we withdrew all advertisements as well as destroying all circulars referring to the "new" Grape Chasselas Napoleon. We were until then quite under the impression that the Grape was a seedling and raised by Mr. Reynolds, and our impression was strengthened by knowing that the Fruit Committee of the Royal Horticultural Society had awarded it a first-class certificate on October 27th, 1891.

Now as to the quality of the Chasselas Napoleon Grape, we maintain that if the variety is properly grown as Mr. Reynolds has grown it, there is a good future before it. Our opinion is confirmed by many. In the first place we take the opinion of the Fruit Committee of the Royal Horticultural Society; would they be unanimous in awarding a Grape a first-class certificate unless there was some special merit attached to it? In the second place, would a great number of leading growers state that the variety would become a first-class exhibition Grape? In the third place, would the Horticultural Press write in such high praise of the Grape as they did when it was awarded a first-class certificate at the Royal Horticultural Society, unless there was some special merit attached to it?

What we say is this, it is an old Grape of very many years' standing, but has never been properly cultivated. If growers will only give it a fair trial, we are convinced it will be extensively



grown in the future. We do not hesitate to say we shall have a great demand for canes next autumn, and we are preparing a large stock to meet the demand. In a very short space of time Chasselas Napoleon will be in collections of Grapes upon the exhibition table.—WM. CUTBUSH & SON.

I DARESAY I was the first to bring the Chasselas Napoleon Grape under notice in a cultivated sense, when I exhibited an entire rod bearing eight bunches at one of the series of fortnightly exhibitions held in connection with the International Exhibition in Paris in 1867. I was induced to grow the Grape really for the name, and not for its merit, and indeed the same indifference caused me to cut out the entire two-year rod, as I had no intention of retaining the Grape as a produce variety. It was very imposing as shown in Paris, and it caused quite a sensation at the moment.

I obtained the Vine originally, amongst some fifty other varieties, from the late M. André Leroy of Angers as Panse Jaune. This, Monukka, and some others I retained, and grew them as far as possible to perfection, first in pots and then planted out in a new vineyard. The Chasselas Napoleon caused such astonishment at the time that I was besieged with inquiries concerning its origin and applications for eyes. My friend Mr. Thomson of Clovenfords had it also from me, and others, of whom I have no recollection. Suffice it to say that the Chasselas Napoleon is not a new Grape. I think I am right in saying that M. Ferdinand Jamin of Bourg-la-Reine gave Panse Jaune the synonym Chasselas Napoleon after I had previously shown it in pots at a meeting in Paris of the Société Impériale et Centrale d'Horticulture, for which I was awarded a medal in 1866.—HENRY KNIGHT, *Royal Parks and Gardens, Laeken, Brussels.*

[Mr. Knight's experience is in close accord with our references to Panse Jaune, syn. Chasselas Napoleon, and Mr. Reynolds' explanation shows what we suspected, that there had been some mistake or misunderstanding in reference to the so-called "new" variety. For this mistake we are bound to think that Mr. Reynolds is mainly responsible, as in a letter from him to Messrs. Cutbush and Son, dated March 1st, 1893, he says—"I have much pleasure in accepting your offer for my new Vine Chasselas Napoleon." The purchasers could not very well infer from this that the variety was an old one. His narrative proves the necessity for our remarks on the subject last week, and the facts of the case are now before the public. Comte Odart in 1854 gives Chasselas Napoleon as a synonym of Panse Jaune.]

## RHODODENDRONS.

So showy and beautiful are the numerous varieties of these hardy shrubs that no woodland walk or shrubbery can be considered complete without them, and for filling large beds in the flower garden or conspicuous positions near the mansion, the best hybrid varieties are especially suitable. When in flower they stand unrivalled among hardy shrubs for the massive trusses of their richly marked flowers. Having so many good qualities to commend them it is the more to be regretted that many cultivators are not successful in growing Rhododendrons, and therefore entertain the idea that they will not thrive in their locality. This I think is in many cases a fallacy. I am convinced that these shrubs will grow fairly well in almost any garden provided a reasonable amount of attention is bestowed upon them. They are not so fastidious in regard to soil as many would have us believe. I have seen them succeed quite as well in a deep somewhat heavy loam as in the best peat procurable; and in soils by no means rich, with due care good results may be obtained.

To be successful with Rhododendrons two things must be strictly avoided. These are: 1, Planting in soils containing a large percentage of lime or chalk; or 2, in positions where water frequently stagnates. The latter state of affairs frequently occurs in stiff clay soils, which only require to be brought into the right mechanical condition, as well as sweetened, by exposure to the atmosphere, to render success certain. Where planting has to be done in a soil of this description, it ought to be prepared during the autumn months. The soil should be taken out to a depth of 2½ feet, 9 inches of broken bricks or stones placed in for drainage, and pipes laid to carry away superfluous moisture. As the soil is returned to the bed large quantities of leaf mould or well decayed garden refuse ought to be mixed with it, and the surface soil ridged up to allow frosts and air to act beneficially upon it. Where this autumn preparation has been unavoidably delayed it may still be done, provided the soil is allowed to lie in a rough state for a couple of weeks before planting is performed. Some might object to planting Rhododendrons thus late, and I fully admit it would not be a wise proceeding if the plants were left to take their chance in regard to moisture at the roots, but in the majority

of gardens of the present day means are provided for watering shrubs when necessary, and under such circumstances planting may be safely done at any time before the flower buds swell, or after the flowers have faded. I have planted Rhododendrons in April, July, and August, and in each instance the results were equally satisfactory, a few good soakings of water being given when necessary.

I think far too much reliance is placed in peat for Rhododendrons, seeing they may be grown equally well without it. Good turfy loam without any other addition answers admirably, provided but little lime enters into composition. A great variety of soils will grow the shrubs well with but little preparation. Pure sweet leaf soil is good for the purpose, but I find well-decayed garden refuse still better. The kind we use for the purpose is formed of the sweepings of walks, leaves from shrubberies, and short grass taken from the mowing machines. These materials are thrown into a heap as collected. At the end of each year the heap is turned, the ingredients well mixed and piled into a wide ridge, where it remains for nine or twelve months before being used. It is then decayed sufficiently to be ready for use, with no other preparation than that of picking out sticks or stones as the carts or barrows are loaded. We collect and prepare large quantities of such materials, and always find plenty of ways to dispose of it in the shrubberies and herbaceous borders. All kinds of shrubs seem to have a decided liking for it, and wherever applied healthy growth and active rootlets soon follow. Whenever I find Rhododendrons becoming unhealthy, a little of the surface soil is removed till a few active roots are found, 2 or 3 inches of refuse is then given in the spring or early summer months, and I invariably find a marked improvement in the colour of the foliage and vigour of growth.

Another point in connection with the growth of Rhododendrons which I think receives too little attention is the desirability of keeping the beds clear, or nearly so, of other plants. A few Lilliums, Gladiolus, or other bulbous flowers look well, and supply a feature when the shrubs are flowerless without being to any appreciable extent inimical to the well being of the Rhododendrons; but in cases where such strong and quick-rooting plants as Musk and Winter Cherry have been planted beneath them the sooner they are uprooted the better, for they carry on deadly warfare against the hair-like Rhododendron roots, and in the end the latter must be beaten in the contest. Many Rhododendrons are seriously checked by the exhaustive process of seeding, and the withered flower trusses should be promptly removed.—H. D.

## BORDER FLOWERS.

THIS spring, so far, notwithstanding much frost, has been the best of many years. Hardy border flowers have not been so beautiful for a long time. Owing to the nature of the plants grown in the borders the greater number of spring plants are bulbous. Among these the early Squills are most charming. We have many large clumps of *Scilla præcox*, and also of *Scilla bifolia*. The prettiest of all is *S. b. alba*, which is quite a gem. We have also a rose form, which, however, is not so good. A great improvement on *S. bifolia* is found in *S. taurica*. *S. botryoides* is showing the blue in its spikes. The one fault of this pretty flower is the evil habit it assumes of spreading beyond bounds. Curiously enough the white form is extremely shy to propagate itself. This is unfortunate, as few flowers can rival it in beauty.

For some time Crocuses have been eminently beautiful. No doubt the extremely free-flowering yellow *Crocus* is the brightest of all, but in such fine weather as we are experiencing all the varieties are beautiful, whites, purples as large as Tulips, and many shades ranging intermediate between these. It is surprising that these are so sparsely grown in large gardens. Another particularly lovely flower is the Spring Snowflake, *Leucojum vernal*; a mass or a bed of this takes a good deal of beating. It is so good that not a small clump but a large quantity ought to find an appropriate place in every garden.

Of non-bulbous plants I like none better than the *Polyanthus* as improved to date. I have every year a border devoted to their special use. The plants are raised from seeds sown out of doors about the middle of March. During summer they are transplanted into the place where it is intended they should flower. About the end of March a slight dressing of manure is sprinkled among the plants and hoed in. The plants may be left a second year, when flowering will begin earlier. As a rule they are finest during April, but from March to May there is much beauty to be found both individually and in the mass.

*Iris reticulata* troubled me long through its much-dwindling habit. Sometimes indeed it died out altogether. For several years it has done well, and the only reason I have to account for



this is that the plants are dressed with fresh material applied to the surface once a year, and in addition a very slight application of superphosphate.

In passing I may say that the latter is a more important manurial agent than is generally supposed. I use a good deal of it in the course of each year. Just at present a very slight dressing is applied to growing flowers—*e.g.*, Tulips, Narcissi, summer Irises, Carnations, early Gladioli, Polyanthus, and to mixed borders; also to Cabbages, Spinach, Onions, and anything that appears to require a fillip. Later the crop of Celery, Carrots, and also bedding plants are treated. There is nothing gained by applying a heavy dressing. For instance, last year I set a man to dress a plot of ground, and when I went back to see how he progressed 2 cwt. had been spread over a superficies of 480 square yards. One-tenth would have been of more benefit to the crop. The general fault with those inexperienced with manures is to apply too heavily. The rule, which may have exceptions, is to dress lightly, and if necessary to dress often.—B.

### PROGRESS OF THE SPRING. IN A SCOTTISH MANSE GARDEN.

It is most interesting to mark the growth and development of the vernal flowers at this season of the year. Owing to the influence of the recent brilliant sunshine, followed in the calm June-like evenings by a gracious dew, much progress has been made. Every morning discloses to the thoughtful mind a new floral revelation. The Chinese Sacred Lily, which is essentially a Narcissus, exceedingly fragrant, but of somewhat unobtrusive attractiveness, is now in full bloom. So also is the familiar Wallflower, "with its homely cottage-smell" (to quote the expressive language which my friend Matthew Arnold applied to another and not fairer flower); while the lilac and pure white double Primroses are glowing everywhere. The Madonna Lily, called "candidum" by Virgil, and "argenteum" by Propertius, both expressive epithets, is growing very rapidly; a slower growth characterises the more delicate longiflorum; and the great *Lilium giganteum* of the Himalayas is just beginning to appear. Only one of the speciosums—*viz.*, the exquisite *Kraetzerei*, has made its appearance; but the *Kramerianum*, or Lily of Kramer, whose colour varies from palest pink to deep rose, has produced to my gratification four strong stems the first year from a single bulb, which surely beats the record. This is a Lily which, as I am informed by Dr. Wallace of Colchester, "rarely does well."

A Gloire de Dijon Rose growing on a wall with a southern aspect has produced its first bud, and many others will be visible within the next two days. The "Gloire" with me is the earliest Rose to bloom; in this respect it is usually in advance of the *Rosa rugosa*, Austrian Briar (*Harrisoni*), or Persian Yellow, which at present are only coming into leaf. Everywhere through the garden is seen the wonderful glow of the Daffodils, which as Shakespeare finely says, "take the winds of March with beauty;" but its golden masses are still more beautiful in front of this manse, beneath the leafless trees. The Snowdrops and the Crocus, having fulfilled their mission, are fast vanishing from our gaze. The Lily of the Valley, that loveliest of the flowers of early summer, is rapidly developing its latent resources, and will come into bloom prematurely this year. The Periwinkle is luxuriating in a remote corner of the garden, and on the flower border opposite the "Adelina Patti" and "Comte de St. Clair" Iris are exhibiting for the first time signs of vitality.—DAVID R. WILLIAMSON.

### DISCUSSION ON PEACHES.

I HAVE read with interest the articles about Alexander and Waterloo Peaches. I prefer the last named, as Alexander is very precarious, nor is the fruit equal to Waterloo. I lose a few buds of Waterloo in the early house, but always have a fair crop of fruit of high colour and good quality. I do not use the camel's-hair brush to fertilise the blossom, but for twenty-five years have used a rabbit's tail. This I skin and glue on the end of a long pointed stick. With this I reach to the top of the trees. I dew the trees with the syringe on fine mornings all through the blossoming and setting season.

When the buds begin swelling I rub off all the back ones, as I scarcely ever lose any blooms through the setting. I have Waterloo in the early house, which is a lean-to 75 by 12 feet. Last year I gathered from the tree on May 5th, and sent the fruit to Mr. Monro, Covent Garden. These were sold for 36s. a dozen. In 1891 I sent my first fruit to market on May 8th, and these made 24s. a dozen.

I also have Waterloo in the late house, which is 180 feet long, and not heated. The low front trellis and the back wall are planted with Peaches and Nectarines. In this house I gather Waterloo about the middle of July, and the fruit is very useful, as it comes in just after the early house is over. Hale's Early in the same house is ripe a few days

after Waterloo is over. Next come Early York, Grosse Mignonne, and Sea Eagle. The last named is a good market Peach. Lord Napier and Pitmaston Orange Nectarines are favourites here. I grow more Royal George Peaches than any other variety, as this is good for table and market, always cropping and colouring well.—W. MOWBRAY, *The Gardens, Fulmer, Slough.*



### NEW FRENCH ROSES.

(Concluded from page 238.)

As I have already indicated, there does not seem to be much hope of our getting anything very novel from our neighbours across the Channel, to whom we have been indebted for so many years for nearly all the lovely flowers which adorn our gardens and attract the notice of visitors at our exhibitions, but that time seems over, as I think may be gathered from two facts; one being that in the new catalogue of the National Rose Society I do not believe that there will be half a dozen considered worthy of a place amongst exhibition Roses of such flowers as have been put into commerce since the supplement was published; the other is that when we look at the list of new Roses sent out in the autumn of 1891 we find that thirty-four Teas, eight Hybrid Teas, and twenty Hybrid Perpetuals were announced, and I do not believe that one of them is known to be worthy of retention in our exhibition lists. Of course there may be a "dark horse" among them that may be at present unknown to fame, but the probability is that if there was anything very good we should have heard of it before now. We must therefore, I think, base our hopes of novelties upon our home raisers.

Your correspondent, Mr. Williamson (page 214), seems to be in a bit of fog about some of the Roses he has named. There is a wide difference between a seedling and a sport, which he does not seem to recognise. Thus, *Merveille de Lyon* is not a seedling, but a sport of *Baroness Rothschild*; *Duke and Duchess of Fife* are but sports of *Etienne Levet* and *Countess of Rosebery*, and not seedlings; *Souvenir de S. A. Prince* is a sport of *Souvenir d'un Ami*; *Augustine Guinoisseau* is a sport of *La France*, and not a seedling. As to Mrs. G. Paul, which, by-the-by, is not a Hybrid Bourbon, but a pure Bourbon, it is a seedling from that very vigorous Rose *Madame Isaac Pereire*. This may seem a digression, but it brings one face to face with the fact that it is amongst the raisers of our own islands, instead of those from France, that we are to look for additions. As far as Hybrid Perpetuals are concerned there is a more scientific system of hybridising practised amongst us. I take the Hybrid Teas first, not because I have any special love for them, but they come first in Ketten's catalogue.

#### HYBRID TEAS.

*Elise Schüle* (H. Geisler).—Brilliant cerise red flower, the petals clear and transparent, those in the centre edged with white; large, full, opening well, tulip-shaped.

*Lady Henry Grosvenor* (Bennett).—Carnation rose flower; large, full, ball-shaped.

*Mrs. Charles Bonting* (Vigneron).—Carnation red rose, shading off to light rose; very large, full in the cup, and very sweet scented.

*Madame Emile-Metz* (Soupert & Notting).—Silvery white flower, tinted and shaded with bright rose, centre light carmine, sometimes yellow; very large and full.

*Michael Buehner* (Soupert & Notting).—Light brick rose flower shaded with carnation red; very large, full, imbricated, cup-shaped.

*Paul Marot* (Bonnaire).—Pale china rose coloured flower; large, full, very long bud. Cross between *Baronne A. de Rothschild* and *Signor Victor Hugo*.

*Richard Wagner* (Tücke).—Salmony yellow flower, shading off to flesh coloured; very large, full, and sweet. Cross between *Belle Lyonnaise* and *Mary Fitzwilliam*.

*Souvenir de Geneviève Godard* (Godard).—Dark china rose coloured flower; full, large, and sweet.

#### ROSES.—HYBRID PERPETUALS.

*Baronne M. de Lustende* (Pergravand).—Centre of flower dark rose, on the outside bright rose, and lighter shade in the autumn; large, very full, long bud. Cross between *Elizabeth Vigneron* and *Jules Margottin*.

*Claude Jaquet* (Liabaud).—Purplish scarlet flower, lightly shaded; very large, full, convex, and very sweet.

*Climbing Queen of Queens* (W. Paul).—Light rose coloured flower; large and full.

*Duchess of Fife* (Cocker).—Light silvery red; large, full, cup-shaped flower, very sweet.

*Duke of Fife* (Cocker).—Crimsony scarlet flower; full and large.

*Dybowski* (Lévêque).—Clear vermilion red flower; large and full.

*Frances Blowam* (G. Paul).—Brilliant salmony red flower, semi-double.

*Grand Duc Alexis* (Lévêque).—Blood-red flower, shaded with purple and light vermilion, lightened up with bright carmine; large and full.



*Imperatrice Maria Féodorowia* (Lévêque).—Bright rose-coloured flower, clear and bright; large, full, and globular.

*J. Proue* (Lévêque).—Bright red flower; uniform, large, and full.

*Madame Henri Perrin* (Schwartz).—Bright lilac carmine red flower, the petals bordered and shaded with light rose, silvery on the reverse sides; large, full, sweet, the petals in the centre fringed.

*Madame Vignat* (Liabaud).—Light red flower, sometimes bright red; very large, full, and very sweet.

*Souvenir de Poncet* (Pernet).—Light rose coloured flower; large, nearly full, and very sweet.

*Souvenir du Dr. Payen* (Vigneron).—Bright red flower, slightly velvety; large, full, and sweet.

*Spenser* (W. Paul).—Fine glossy red flower, outside petals dark, and white on the reverse sides; very large, very full and compact in shape, opening well.

*Violet Queen* (G. Paul).—Dark crimson flower, shaded with violet; large, full, cup-shaped.—D., Deal.

### AMARYLLISES AT CHELSEA.

INTEREST in the work of Amaryllis improvement as carried on by Messrs. Veitch & Sons at Chelsea appears to deepen rather than diminish as the years roll on. Stage succeeds stage, and yet the climax is not reached. The main attributes held in view by the hybridisers several years ago have nearly all been secured, but still points of advance suggest themselves, and so each succeeding season finds fresh improvements. Considering the beauty and value of the plant, it is not a matter for surprise to find that the attractiveness of the Chelsea collection grows yearly. To the list of visitors who annually inspect it in order to keep pace with the march of improvement are to be added fresh names each year, and these in turn usually come to make a periodical journey to the Amaryllis home.

The present season will perhaps have taken some intending callers a little by surprise. The long spell of warm and genial weather in March, so unusual at this period of the year, brought the plants on with great rapidity, and the consequence is that the bloom is fully a fortnight earlier than usual. Should this intimation catch the eye of any person who is proposing to make a call any time during the next few weeks he or she will not act unwisely if a determination is arrived at to go at once. It will be some time before the collection is quite over, but just now it is quite at its best. It is difficult to avoid indulging in a little retrospection when standing in the Amaryllis house once more and endeavouring to make a comparison between the present and past seasons. The result in the minds of many will probably be a conclusion that for wealth of bloom the present season eclipses all its predecessors. The forest of vigorous spikes appears to have grown thicker, the mass of brilliant flowers seems to have become more dense. Surveying the collection as a whole from an elevated position at the entrance to the house strengthens this impression. Without doubt there is an advance in the floriferousness of the plants. Another point will probably strike regular visitors—the collection as a whole is dwarfer. The plants have not lost an iota of their vigour, the scapes are as stout and strong as they have ever been, but an inch or two have been gained all round, for, within certain limits, dwarfness is an advantage.

The character of the flowers exhibits no marked change. The work has now gone too far for that; development can only be gained slowly. But if we see no great steps made in size of bloom there is a welcome advance in other important qualities. The flowers are becoming more rounded, the segments having lost their old sharpness and having become more evenly disposed. This is giving a far superior type of flower to the old, and may fairly be said to be more important than mere size. It is more difficult to soften the sharpness of the petals than of the sepals, but this object is being steadily achieved. The rounder and the more closely disposed the segments are the more refined and beautiful is the flower, consequently progress in this direction is followed with interest and satisfaction.

Another improvement is the multiplication of self flowers. Tastes differ, of course, but it may be supposed that the great majority of Amaryllis lovers will welcome the elimination of the central rays, especially those of a greenish tinge. If not an absolute disfigurement to the flower they detract in some measure from its beauty, and, moreover, are the sign and token of first principles rather than advanced evolution. The selfs are now the most popular class, and the increase of their numbers adds, and will add, to the merit of the collection. Light flowers, too, are popular, and their beauty, whether lightly or heavily flaked and reticulated, cannot be gainsaid. To sum up the present signs of progress in Amaryllises, the two leading points are roundness of bloom and self colours. The further development of both may be hoped for and expected.

The following comprise twenty-four of the most meritorious novelties of the present year:—Coracle, dwarf, of fine habit, strong and free, rich scarlet; Dolabel, small but very neat, crimson with white rays, free and bright; Mirabella, white, lined and reticulated with rosy red, well rounded, a dwarf sturdy variety; Nyanza, rich crimson scarlet, well rounded, dwarf and good; Cherub, white, regularly lined with rosy red, free and dwarf; Leonidas, scarlet suffused with purple, a large and brilliant flower; Phyllis, white with a few flushes of rosy red, large bloom, dwarf grower; Norma, heavily flaked and reticulated with crimson, dwarf, strong and very free; Pompadour, rich deep crimson, an enormous flower with great breadth of petal; Renown, light red with central bars of white, beautiful shape, well-rounded segments, a strong grower and very free; Calabar, intense crimson with purple

suffusion, dwarf and free; Hecla, purplish crimson with yellowish rays; Ninus, vermilion white rays, segments beautifully rounded and recurved; Leerdan, bright scarlet crimson, fine large well shaped flower; Vedette, rich crimson purple, perhaps the deepest of all, medium size and of good shape; Jocasta, white, crimson bars, a finely rounded flower; Mysis, rich purplish crimson with white rays and flakes, a very large flower of good shape, dwarf and sturdy; Smollett, rich scarlet, very strong and free; Dacca, brilliant but soft shade of red, white rays, good shape; Phormis, deep margin of crimson, centre white, broad sepals and a well rounded flower; Archelaus, glistening crimson self with purple suffusion; Palliser, rich crimson self, purple suffusion; Princess Marie, white with a few flakes, a beautifully moulded flower; and Sardius, almost a self, but with very small central rays, large round flower, and a dwarf strong grower.

The healthy condition of all the plants justifies a few remarks in reference to management. At the time of our visit (March 24th), the plants had only been watered twice since last August, the first time being a month ago, yet they are conspicuous by their fresh appearance, the foliage being substantial and of the richest colour. The Chelsea growers hold that over-watering is one of the commonest evils in Amaryllis culture. Their plants are liberally watered after flowering while making their growth; but after the end of July the supplies are lessened, more air and sun are admitted, and the plants are gradually ripened off. In October they are lifted from the spent tan in which they are plunged and stood upon the stage, receiving not a drop of water throughout the winter. This treatment insures plump and well matured bulbs. Another point of interest in connection with the cultural treatment is the small size of the pots used. They consist of 5 and 6-inch, none larger, and in these enormous bulbs are growing. These matters may be worth consideration on the part of private cultivators, for the results at Chelsea are too strikingly satisfactory to admit of any doubt as to the soundness of the methods pursued.

### DEATH OF MR. JOHN GARRET.

WE regret to announce the death of Mr. John Garret, a respected northern florist, which took place on the 18th March last at 13, Landsdowne Terrace, Gosforth, near Newcastle-on-Tyne. Mr. Garret, who was sixty-nine years of age, was from a very early period of his life an enthusiast in horticultural matters. All through an active business career he lost no opportunity of pursuing his favourite recreation, and made the subject so thoroughly his own that he enjoyed a considerable reputation in the north both as an exhibitor and as an authority. When he retired from business in 1880 he removed to Hindley, near Stocksfield-on-Tyne, and there his tastes obtained full scope. His garden soon became known as one of the horticultural treats of the neighbourhood, and he always welcomed anyone interested in plant culture.

While at Hindley Mr. Garret enhanced his reputation as a successful exhibitor. His principal successes were in Begonias and Zonal Pelargoniums. These he brought to a remarkable perfection, and with them was repeatedly first at the Newcastle shows. The expiry of his lease compelled him to leave Hindley, and he took up his residence at Gosforth. There his opportunities for floriculture were very limited, but he retained his interest in it till the last. He subscribed to the first number of the *Cottage Gardener*, and took considerable pride in his well bound set of it, and its continuation volumes of the *Journal of Horticulture*, and to the diligent study of their pages he attributed much of his proficiency in the art of plant culture. Several years ago, when one of the staff of this paper was in the north, Mr. Garret learned that he was one of six who were known to have been among the original subscribers. He often alluded with gratification to this fact.

Mr. Garret took an active part in encouraging horticulture, and was an enthusiastic supporter of the Newcastle Botanical Society. For a long period he was a member of the Committee of that body, for some time occupying the position of Vice-Chairman. At the time of his death he was the only honorary life member of the Society, a mark of distinction conferred upon him in recognition of his disinterested and unwearying services to the cause in the North of England.

### GARDENERS' ASSOCIATIONS AND SITUATIONS.

I WAS more than pleased to read the outspoken remarks, under this heading, of your correspondent "A., Yorks," in a recent issue (page 173), as he gives expression to views that I have long held myself. If the Royal Horticultural Society, which is looked upon as the exponent of practical horticulture in this country, could be prevailed upon (in addition to its other work) to inaugurate a "National Registry," where employers might seek and find good gardeners, I believe (with your correspondent) the Society would get a much larger share of the gardeners' support than at present, and employers might also be expected to associate themselves with the Society.

The "National Registry" could be "worked" well with the Society's examination scheme. Of course the "Registry" would not be confined to those only who presented themselves at the examinations. It would be open to all who chose to avail themselves of it. Would it not be an incentive to an employer to engage a man who had passed successfully through these examinations (not, by any means, that these will cause all the good men to come forward)? which, let us hope, will tend towards a considerable thinning out, to use a gardening term, of so-called gardeners in the ranks; this latter class causing the over-supply we must all deplore to see at the present day, and acting most prejudicially in the all-important matter of remuneration to really good men.



The question of wages, although a tender one to touch upon, is not one by any means to be despised, and doubtless the scanty pay of gardeners (of course there are notable exceptions, but these only serve to prove the rule) very effectually deters many an intelligent young man—one who wants to make way in the world, and is desirous of entering the profession—from taking the step.

Let us make the gardener's calling one well worthy to be embraced, attracting to it fit representatives, adequately recompensing the men who assist Nature in producing the useful as well as beautiful results to be witnessed on every side, and there will be no lack of "good men and true" forthcoming, men who will shed lustre on the "gentle art." I should much like to see this very important matter thoroughly discussed. It is one right worthy of such prominence being accorded.—J. B.

### SPIRÆAS.

SOME of the most popular of the Spiræas are unrivalled for general decorative purposes, and being so easily forced they can be had in bloom from Christmas to April and May. When grown in pots abundance of water must be applied to bring these plants to perfection. Liquid manure, such as drainings from the cowsheds, is an excellent stimulant for Spiræas, and should be applied two or three times a week after the flower spikes begin to show. I find the best results are obtained by filling a bucket or tub with about one part of liquid to two of clear water, and dipping the plants so that the water comes over the top of the pot and letting them remain till the soil is thoroughly moistened. Care should be taken not to wet the foliage, otherwise it will present a stained and dirty appearance.

The old *S. japonica* is too well known to need any comment here, other than saying that it is the best of the whole genus for early work, for when well ripened clumps are procured and potted early in the autumn they will stand hard forcing. *Spiræa astilboides* is a useful plant. The stems grow from 2 to 3 feet in height, forming a pretty bush, above which elegant white flowers are produced. It does not force so readily as *S. japonica*, for if subjected to too high a temperature it is liable to become drawn.

*S. Aruncus* (the Goat's Beard) possesses sufficient attractions to secure its admission into every well kept garden. It grows to a height of from 4 to 5 feet. The long feathery plumes are most graceful. It prefers a moist shady position, being most effective as a background to herbaceous borders and in sheltered corners of the pleasure grounds.—G. PARRANT, *Ashby Lodge Gardens, Rugby.*

### JOTTINGS FROM MEMORY.

IN Mr. J. W. Moorman's interesting article under the heading of "Jottings from Memory" (page 217) reference is made to the growth and hardiness of *Fabiana imbricata*, the Myrtle, and *Aloysia citriodora* at Teignmouth, Devon. This reminds me of other places where I have seen the above mentioned popular shrubby plants flourishing.

*Fabiana imbricata* growing against the south front of the Bishop of Salisbury's palace, Salisbury, yields a profusion of its pure white long-tubed, Heath-like flowers, in May and June every year. This shrub, introduced in 1838, is not so frequently met with in southern and western counties in England and Ireland as it undoubtedly deserves to be, giving it the protection of south wall and light peaty soil to grow in being all the attention it requires, excepting the training and securing of young growths to trellis or wall. I have seen huge bushes of the Myrtle in the grounds of Appley House, Ryde, and, I believe, at Binstead, near the same fashionable watering place, also at Osborne and other places in the Isle of Wight.

The finest plants of *Aloysia citriodora* that I have seen growing out of doors were at Mr. Dadd's, North Devon Fernery, Ilfracombe, growing and trained against the south wall of his dwelling house. Another occupying a like position on the house of C. S. South, Esq., The Close, Salisbury; and one trained against the coachman's house, Emo Park, Portarlinton, Ireland, covered a good space of wall. At Frognal, Fooks Cray, Kent, there used to be, and perhaps are still, two fine plants (bush plants) growing on either side the steps descending to the flower garden from the conservatory. These used to be tied into pyramidal form on the approach of severe weather, and fern wrapped round them and neatly trimmed, first lay on about 6 inches deep of ashes over the roots, thus making the plants quite secure during the winter months. With me the roots are protected in the manner indicated, the branches being killed down to the ground in severe winters, but they push into fine growth from the base in due time every season.—H. W. WARD.



CIRRHOPE TALUM PICTURATUM.

ABOUT thirty species of *Cirrhopetalum* are known, but very few of these are in general cultivation. Like their near allies the *Bulbophyllums*, they are remarkable rather for the peculiarity than

the beauty of their flowers. *C. picturatum* (fig. 50) is, however, attractive alike in form and colour, and no doubt requires only to be better known to become popular. It is a dwarf free-growing species with ovoid pseudo-bulbs, each bearing one dark green, oblong, fleshy leaf from 3 to 6 inches in length. The scape,



FIG. 50.—CIRRHOPE TALUM PICTURATUM.

which is produced from the base of the pseudo-bulb, is about 8 inches long. The flowers are borne in a semicircular umbel, and the inflorescence has a somewhat curious appearance. The small upper sepal is green, spotted with red, and has an awn-like filament at the apex. The lateral sepals are about 2 inches in length; they are united by their margins, and form one long blade of an emerald green colour. The lip is very small, almost black, and conspicuous only by its vibration with the slightest breath. The prolongation of the lateral sepals is characteristic of the genus, and distinguishes it from the *Bulbophyllums*.

Abundance of light, air, and water are the chief factors in the successful culture of this plant. It succeeds equally well in baskets or on blocks suspended near the roof in a warm house. *C. picturatum* is said to have been grown in London fifty years ago, but it had apparently disappeared from cultivation until re-introduced from Moulmein a few years since.—A. B.



## ORCHIDS AT ST. ALBANS.

ONCIDIUM AMPLIATUM MAJUS makes a unique display of flower here just now, there being many spikes of bloom of this old favourite, the individual spikes carrying upwards of 200 blossoms. The floral effect is enhanced by the peculiarity of the bright yellow flowers being of a milky whiteness on the under side. Dendrobium hybridum Owenianum is a good companion to the lovely and brilliant D. Venus and the graceful D. Cassiope. It was raised by Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne. The flowers, which are produced with the greatest freedom, are borne in twos and threes, being carried well away from the pseudo-bulbs.—J. B.

## DENDROBIUM NOBILE.

AT the present time there is to be seen at the seat of J. P. Brice, Esq., Bystock, Exmouth, S. Devon, a grand specimen of Dendrobium nobile in bloom. The plant is between 4 and 5 feet in diameter, and bearing from 500 to 600 fully expanded flowers. Mr. Swan lays great stress on the ripening and resting of Dendrobiums, which proves beyond a doubt that this treatment is correct by the lovely specimen to which I have alluded. There will be a grand display for some time to come, as some plants are just starting and others are showing their buds.—D. H. M.

## ANGRÆCUM SANDERIANUM.

A specimen of this charming little Angræcum, certainly the best of the smaller species, is now flowering in the warm Orchid house at Kew. It is a native of the Comoro Islands, and was introduced by Mr. Sander of St. Albans, whom it commemorates. It is of very dwarf habit, with shining dark green tongue-shaped leaves from 3 to 6 inches in length. The flowers are borne in two rows on a graceful drooping spike about 1 foot long. They are about 2 inches in diameter, of the purest white, and last a long time. The spur is 3 or 4 inches in length. If treated like Phalænopsis no difficulty is experienced in keeping this species in perfect health. It is well figured in vol. xxi., page 489, of this *Journal*.

## CALANTHE STRIATA.

THOUGH the evergreen species of Calanthe do not enjoy the widespread popularity of the more showy deciduous sorts, amongst them may be found plants of decided merit. *C. veratrifolia*, *C. masuca*, *C. furcata*, and *C. striata* for instance are free flowering and handsome species that would grace any collection. The last-named, as represented by plants now in flower at Kew, has erect racemes about 15 inches high, with flowers about 1½ inch in diameter. The sepals and petals are cinnamon-brown with a narrow margin of golden yellow; the three-partite lip is pale yellow. The dark green lanceolate leaves are about 9 inches in length. *C. striata* is a native of Japan. It requires an intermediate temperature, and succeeds well in a compost of peat and loam with a little silver sand and sphagnum added. Plenty of moisture at all times is essential.—A. B.

## HORTICULTURAL EXAMINATIONS.

THE Royal Horticultural Society, in compliance with numerous requests from county councils, directors of technical institutes, lecturers, and others, intends to hold an examination in the elementary principles and in the practice of horticulture. The date fixed for the examination is Thursday, May 4th.

Being anxious that everyone in the United Kingdom who desires to sit for such examination may have the opportunity of so doing without unreasonable difficulty, we are prepared to institute such examination in any village or town in the kingdom where any magistrate, or clergyman, or schoolmaster, or other responsible person accustomed to the conduct of examinations, will undertake to act as our representative and see that our rules are strictly observed, and that no copying or consulting of books, &c., takes place. Anyone, therefore, wishing to sit for such examination can do so close to his own house, if he will, by the end of the first week in April, put me in communication with any such responsible person who is willing to act as our supervisor of the examination. Obviously we must leave this part of the work to the candidates themselves, as we cannot know the names of suitable and willing persons in every village and town in the country.

Three scholarships of £26 a year, tenable for two years, are offered in connection with the examination, and I am already in correspondence with a very large number of persons in all parts of the country with reference to it.

A fee of 3s., payable in advance, will be charged to all persons entering for the examination, and all letters on the subject requiring an answer should contain a stamped and directed envelope. I need

hardly say that the fee of 3s. will not nearly cover the necessary expense of the examination, which will, therefore, entail considerable loss on the Society's general funds; but the Council are of opinion that by putting the fee as low as possible they are promoting the best interests of horticulture, and they trust that their action will commend itself to all lovers of gardens. The entrance fee should in all cases be sent to me before the date of examination.—W. WILKS, *Secretary, Royal Horticultural Society, 117, Victoria Street, S.W.*



EVENTS OF THE WEEK.—Apart from the customary auction sales, but little of horticultural interest will take place in the metropolis during the ensuing week. The monthly meeting of the National Amateur Gardeners' Association will be held, however, on Tuesday, April 4th, at the Memorial Hall, Farringdon Street, and the Fellows of the Linnean Society meet on Thursday, April 6th.

— THE WEATHER IN LONDON.—We have to record another week of bright dry weather in the metropolis. Saturday and Sunday were warm and sunny, but cold winds were prevalent on Monday. Tuesday was also a typical March day—bright, with rather keen winds. Wednesday opened similarly, and at the time of going to press there are prospects of the fine weather continuing.

— WEATHER IN THE NORTH.—We have had a week of remarkably fine weather, the days sunny and warm, with frosts of from 4° to 6° during the nights. Although there has been no frost for the last two nights (28th), the weather has been colder, as the wind set into the east on Sunday.—B. D., *S. Perthshire*.

— BRITISH FRUIT GROWERS' ASSOCIATION.—A general meeting of the members of this Association was held at the Hotel Windsor on Tuesday, March 28th, Mr. T. Francis Rivers occupying the chair. Owing to the gross irregularities of an official it was ultimately, on the proposition of Mr. Jefferies, seconded by Mr. Bunyard, unanimously resolved "that the affairs of the Association be forthwith wound up with a view to its dissolution." A sub-committee was appointed to carry out the necessary details relative to the proposition.

— DEATH OF MR. ALEXANDER MCKENZIE.—We regret to announce the death of the Bailiff of Epping Forest in his sixty-fourth year. (Mr. McKenzie was born in Inverness-shire, and eventually became gardener to a member of the Metropolitan Board of Works, and his abilities recommended him to other and wider duties. He designed the grounds and planting of the Alexandra Park, also the Thames Embankment Gardens, and planted the avenue of Plane trees along the fine promenade. He was also employed in landscape work generally till his appointment by the Corporation of London to the position which he creditably occupied till his death. Mr. McKenzie was a Major of the Honourable Artillery Company, and was greatly respected by many friends. His funeral takes place in the Finchley Cemetery at 2.30 on our date of publication.

— DAISIES FROM SEED.—Those who wish to work up a stock of these useful spring flowering plants quickly will do well to give this method of propagation a trial, for if they obtain seed from a reliable firm they may depend upon getting a large percentage of really good flowers. Last June I sowed some seed, and when the seedlings were large enough planted them in rich light soil 6 inches apart, taking care throughout the summer months to keep the soil well stirred with the hoe. With this treatment they grew strong and sturdy, showing much greater vigour than other plants obtained by division. The seedlings are now coming into flower, the few worthless ones being consigned to the rubbish heap, and the others are planted in beds and borders. I find the white and pink forms are especially good, the flowers being large, full, and equal to many named varieties. Daisies of all descriptions do best with us when the planting is delayed till spring, for however firmly the soil may be pressed around them, if removed during the autumn, the action of the winter frosts upon the soil loosens it so much that many of the plants are lost in consequence of the roots being exposed to sharp frosts when unaccompanied by snow.—H. DUNKIN.



— GARDENING APPOINTMENT.—Mr. John Southwell, late under gardener at Berkswell Hall, has been appointed head gardener to C. W. Digby, Esq., Meriden Hall, near Coventry.

— DEATH OF MR. HENRY DEVERILL.—We regret to hear of the death of Mr. Henry Deverill, the well-known seedsman, who died on the 16th inst. at his residence, Grimsbury, Banbury. Mr. Deverill, who had a wide reputation for his "pedigree" Onions, was in his fifty-second year, and leaves a widow.

— SENEIO SAGITTIFOLIUS.—This new species, which was introduced from Uruguay, is now flowering in the succulent house at Kew for the first time in England. The flowers are white with yellow disc, and are produced in heads on spikes several feet in length. The leaves are dark green and attain a length of nearly 3 feet.

— WAKEFIELD PAXTON SOCIETY.—At a meeting of the members of the above Society Mr. A. Batty of Rothwell read a paper on "Legends Respecting Trees and Plants." The essayist gave much information with regard to a large number of trees and plants, and some curious and amusing legends connected with them.

— LEE, BLACKHEATH, AND LEWISHAM HORTICULTURAL SOCIETY.—The subject of a paper by Mr. J. Laing was "Begonias and their Culture," read before a good attendance last Friday evening. A first-class certificate was awarded to Mr. Judge, gardener to J. C. Geiselbrecht, Esq., Lee, for a seedling *Clivia* of two trusses, containing seventy-six blooms of a deep orange colour.

— DEATH OF MR. W. TRESEDER.—We regret to announce the death of Mr. Wm. Treseder, the well-known florist and nurseryman of Cardiff, which occurred somewhat suddenly at his residence in Cowbridge Road on Wednesday, 22nd. Mr. Treseder was in his sixty-fourth year, and had not only the establishment in Cowbridge Road, but he had also established a large nursery at Llandaff, and extensive gardens at Whitchurch. Mr. Treseder was a member of the Canton Local Board, and when that district became merged in the Cardiff Corporation he was twice elected to the Council for the Canton Ward. The business will be carried on by Mrs. Treseder and the sons. The funeral took place on Monday at Llandaff Cathedral.

— SPRAYING FRUIT TREES.—A law has been enacted in Ontario, Canada, forbidding the spraying or sprinkling of fruit trees while they are in bloom with any mixture containing Paris green or other substances poisonous or injurious to bees. The object of the legislation is to protect the bees from harm, the honey from possible taint of poisoning, and to avoid obstacles to the complete fertilisation of the fruit.

— EXPORTATIONS OF POTATOES.—It may seem curious to the ordinary public to note that while salesmen are importing thousands of bushels of Potatoes into this country from France, Germany, and elsewhere, home growers are exporting tubers to America. A transatlantic contemporary to hand states that on one day early in the current month no less than 31,883 sacks of Potatoes were received from Dundee, 175 sacks from Liverpool, and 1736 sacks from London.

— BIRDS AND FRUIT BUDS.—Mr. James Hiam, Astwood Bank, writes:—"Readers will see on page 223 that 'W. T.' and I do not agree about poor 'Chit-a-dee-dee,' a local name for the tits. It may not be the first time we have had a good humoured 'peck' on another matter, and if so we are quite as likely to retain our own opinions in this question. Unless 'W. T.' can suggest a better plan than mine—viz., to carefully watch every movement of these birds for forty or fifty years, and then shoot one when feeding on fruit trees among the buds to clear up a disputed point, open its craw and gizzard, turn out the contents, and save it for future contradictions should they arise, and find nothing but injurious insect pests instead of buds; why, I must leave the matter as it stands."

— ALLOTMENTS AT HAMPTON WICK.—The Board of Works having, after much trouble, finally permitted the Local Board of Hampton Wick to have possession of six acres of meadow land lying between the Thames and the Home Park, near Kingston Bridge, the ground was marked out in 10 rod and 20 rod plots, and balloted for last week, and possession taken by the allotment holders on Saturday last. The soil is of dark free nature surfaced by a rich pasture, and should with due cultivation make fine garden ground. The first efforts at breaking up were not encouraging, as many of the holders seemed to have poor notion of digging, and did their work in an indifferent and laborious way. The ground was originally priced at 1s. per rod, but the applicants rebelling the Local Board reduced it to 6d. per rod.

— DEATH OF DR. KARL PRANTL.—The "Botanisches Centralblatt" announces the death of Dr. Karl Prantl, Professor of Botany in the University of Breslau, and Director of the Botanic Garden there. For some years past Dr. Prantl has edited "Hedwigia," a journal devoted to cryptogamic botany; but it was chiefly as a teacher that he was known.

— NEW PLANTS FOR 1892.—A list of the new plants for 1892 has been published as an appendix to the *Kew Bulletin*. The list, however, not only includes new plants, but those that were re-introduced last year after being for some time lost to cultivation. Brief descriptions of the plants are given, as also are references where they have been fully described or figured.

— SULPHATE OF AMMONIA FOR FORCED STRAWBERRIES.—It may not be generally known that sulphate of ammonia is an excellent stimulant for Strawberries in pots. Given once a week at the rate of half an ounce to 1 gallon of clear water is a safe plan of using this powerful stimulant, and does not interfere with the regular supplies of liquid manure usually employed for this purpose.—S.

— THE HERTFORD HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—This Society, which has been in existence only fifteen months, is in a most flourishing condition, and has a membership of 240. Exhibitions amongst members are held fortnightly, certificates of merit being awarded to the professional gardeners, amateurs, and cottagers' sections for the best exhibits of fruit, flowers, or vegetables. The Chrysanthemum Show in connection with the Society is fixed for November 2nd and 3rd, 1893.

— WE have received several parts of the French edition of Nicholson's "Illustrated Dictionary of Gardening," which is appearing under the title, "Dictionnaire Pratique d'Horticulture et de Jardinage." It is under the editorship of M. S. Mottet, assisted by MM. Vilmorin Andrieux et Cie., G. Alluard, E. André, G. Bellair, and G. Legros. With such a staff at his command M. Mottet may well undertake such a task, and with the examples before us we look forward to the production of such a work as will be of great value when completed.

— DESTROYING INSECTS.—In his paper on Plant Culture and Insect Pests, read at a meeting of the Liverpool Horticultural Association, Mr. Hugh Ranger recommended for mealy bug either Fir tree oil or petroleum, the latter being used at the rate of a wineglassful to three gallons of water. For thrips he had not found anything better than tobacco smoke. For aphid or green fly quassia chips and softsoap. For red spider he recommended a moist atmosphere, by having the hot-water pipes coated thickly with sulphur, taking care to put plenty in the troughs as well, then heating the pipes to nearly boiling point and keeping the house closed for a few hours.

— MOSELEY BOTANIC GARDENS, BIRMINGHAM.—We have received a schedule of prizes offered at the exhibitions to be held at the above gardens during the ensuing summer. On May 10th and 11th an exhibition of floral designs, bouquets and similar decorations will be held, while on June 7th and 8th there is to be a special display of Pelargoniums, Orchids, Pansies, and stove and greenhouse plants. A great Rose show will be held on July 19th and 20th, and on August 29th, 30th, and 31st there is to be an exhibition of Dahlias and other flowers, fruits, and vegetables. Mr. W. Dean, Dolphin Road, Sparkhill, Birmingham, is the manager of the exhibitions.

— PROPOSED TESTIMONIAL TO MR. M'HATTIE.—The removal of Mr. J. W. M'Hattie from the gardens at Newbattle Abbey to an important position in the south of England has been considered by a number of his brother horticulturists and personal friends a fitting opportunity to express in a tangible form the high esteem in which he is held. Mr. M'Hattie has occupied the position of gardener to the Most Noble the Marquis of Lothian at Newbattle Abbey for the period of eight years, and by his rectitude of character, intelligence, courtesy, and kindness of manner, has endeared himself to all with whom he has come in contact, whilst his success as a cultivator in many departments of horticulture, notably as an exhibitor of fruit and Chrysanthemums, as well as his valuable contributions to horticultural literature, entitle him to a prominent place in the front rank of Scottish gardeners. A Committee has been formed to receive subscriptions for the purpose of presenting Mr. M'Hattie with a testimonial previous to his leaving Scotland, and the time available being very limited, all who wish to subscribe are invited to intimate their contributions to any member of Committee, or direct to the Secretary or Treasurer, not later than Saturday the 1st of April.—MALCOLM DUNN, *Chairman of Committee, The Palace Gardens, Dalkeith.*



— CULTIVATION OF PLUMS.—In connection with the series of lectures on "Hardy Fruits," under the auspices of the Scottish Horticultural Association, Mr. Dunn, Dalkeith, recently delivered a lecture on "Plums." Mr. Dunn remarked that even the Apple, from a commercial point of view, was very little more important than the Plum. For private purposes the Plum was most valuable, as it could easily be preserved. The merits and qualities of the different varieties, both in Scotland and England, were touched on, and the means of raising new varieties discussed.

— FRUIT AND POTATO TRADERS' BENEVOLENT SOCIETY.—Many members of the wholesale fruit and Potato trades and growers met at the Holborn Restaurant on the 22nd inst., to inaugurate the first festival dinner of a new charity called the London Wholesale Fruit and Potato Trades and Growers' Benevolent Society. The Lord Mayor presided, and there was a large attendance. The object of the Society is to provide pensions and homes for the necessitous salesmen and growers. The annual subscription is one guinea, entitling a subscriber to one vote; five guineas covers a life governorship and two votes. The age for pensions has been fixed at fifty-five years, and will not exceed 15s. per week to men, and 10s. to widows. A sum of £600 was received in connection with the dinner.

— GRAPES AT FLOORS.—Mr. J. H. Goodacre writes:—"Mr. Barnes (page 239) will not expect all to smile on the plan he adopts in calling his own mistakes other people's errors. It may be news to Mr. Barnes to hear that I know too much of Floors to suppose the Vines that produced the Grapes figured on page 31 of this Journal to be forty years old. As the variety has not been raised quite forty years yet I should not be guilty of committing this 'error.' Mr. Barnes takes pains to describe much of the important work done at Floors during his few years' service there, but does not appear so anxious to give credit to the present managers." Another correspondent sends us extracts from his diary having reference to the lifting of Vines and the renewal of the border there, but it is scarcely necessary to prolong the discussion on those points. The condition of the Vines sufficiently indicate that the work was done well, and the Grapes we have seen were highly creditable to the cultural skill of both the present gardener at Floors and his predecessor.

— MARCH WEATHER IN HAMPSHIRE.—What a contrast is the weather experienced throughout the present month as compared with that of the same month for the past two years. The temperature registered to-day (25th) here was 71° in the shade, yesterday 70°. On nine days previously during the month 60° and over were registered. Throughout the whole of the corresponding month of last year the thermometer rose but four times past 60°, 64° being the highest point gained. During the year 1891 but twice did we register 60°, and that on the 1st and 2nd of the month, 58° being the highest point attained besides. In the matter of moisture this month compares favourably so far with the last. The first three days rain fell to the extent of 0.35 inch, since that date we have not had to record a single drop. If there is any truth in the saying that March dust is worth a guinea an ounce we ought to be favoured this year in point of weather, as hereabouts there is plenty. Many of the nights have really been warm, on several occasions the minimum register not being lower than 45°.—E. MOLYNEUX, *Swanmore Park*.

— INSTRUCTION IN HORTICULTURE.—During the past three weeks, Mr. James Hiam, Astwood Bank, has carried out, in connection with the Worcestershire County Council, most successfully eighteen meetings in classes in practical work, such as pruning, grafting, budding, grease-banding illustrated, insecticides, and their distribution. At twelve meetings three powerful microscopes have been busily employed in making the classes and public practically acquainted with insect pests to fruit growers, such as red spider in the egg and at maturity, the effects of their destructiveness on Gooseberry bushes; the winter moths, their eggs as found on trees and hatched out, and the caterpillars crawling by hundreds; the Black Currant mites and the infested buds; Plum aphid as found in winter, and the young produced by the viviparous females; Apple aphid in the egg state and hatched out; Psylla mali in the eggs and hatched now on the trees; mussel scale; brown scale, and others well known by sight but not by name. These subjects have been explained as each came under observation, and the best known remedies to counteract them. The series of lectures will conclude with birds and horticulture; innocent useful insectivorous birds; partially so; and destructive birds, and how best to deal with them.

— DEATH OF DR. G. VASEY.—We learn from "Nature" of the death, on the 7th instant, of Dr. G. Vasey, the chief of the botanical section of the United States Department of Agriculture at Washington. He was a native of Yorkshire, we believe, and emigrated to America many years ago. The Grasses of North America were his special study, and he published several important works on this family. The "Grasses of the Pacific Slope" and the "Grasses of the South-West," fully illustrated, are his latest works; but the former is not yet completed. Dr. Vasey wrote also on the agricultural value of the Grasses of the United States. Last year he visited England, and made many friends through his amiable disposition.

— THE NATIONAL AURICULA SHOW.—Those interested in the cultivation of this favourite plant will have an opportunity on April 25th, at the Drill Hall, Westminster, of seeing a display, principally by amateur growers, of Auriculas and other spring flowers. Of late years many new and beautiful varieties of the former old florists' flower have been obtained by judicious crossing and careful cultivation, while some of the older kinds of Auriculas, which were grown by our forefathers, are still to be found in many collections. Being an amateur grower in a small way of this floral pet, the Auricula, I wish to bring under the notice of those who have not yet cultivated it what little space and small outlay is required, a cold frame only being necessary to protect the plants in severe weather. At this forthcoming show a liberal prize list will be offered for competition. The show promises to be a very good one owing to the favourable season, and some of the leading northern growers are likely to exhibit. Prizes are also offered for seedlings, and many good ones may be expected. I have always found growers of the Auricula at these annual gatherings ready to impart information and give useful hints to less experienced cultivators.—W. SMITH *The Links, Bishop's Stortford*.

— SOWBREAD AND SWINE'S SNOUT.—On page 230 I observe that a correspondent objects to these undignified and inelegant names as applied to the Cyclamen and the Sisyrinchium respectively. As for the first it is founded upon fact, and I believe originated in the Italian language, as it is said that in Italy, and especially in Sicily, wild swine feed largely on the roots of the Cyclamen which abounds there. The name passed on to us through France, where the bulb is known as *Pain de Pourceau*. But the name Swine's Snout, besides being objectionable in itself, originated in an utter misconception of the meaning of the Greek name Sisyrinchium. I am not going to discuss the hopeless subject of the identity of the plant which Theophrastus calls Sisyrinchium. It was a white bulb, classed by that writer amongst wool-bearing (eriophorous) bulbs, of which the soft fibrous substance of the tunics was utilised, and even supplied material for worsted stockings. There is some doubt amongst editors about the right spelling of the name, both in Greek and Latin; but the Greek word *sisyra* and its diminutive *sisyrinium* bear the sense of a woolly or shaggy cloak. It is probable that these words are connected with the name of the wool-bearing bulb. No Greek author could have made such a clumsy compound of the two words suos + rhynchos (Swine's Snout). The similarity of sound is quite accidental.—C. WOLLEY DOD, *Edge Hall, Malpas*.

— WIDCOMBE HORTICULTURAL CLUB.—A meeting of this Club was held on Tuesday night in Widcombe Parish Room, Mr. B. J. Baker presiding over a numerous attendance of members. Mr. F. Nash's paper on "Bulb Culture" was read by Mr. R. A. Moger, the Honorary Secretary, and proved to be of much practical value. Mr. Nash had previously given a lecture on the same subject, and now he dealt with the various forms of Lily and Iris. Lilies, he explained, were matchless for providing cut flowers, giving a supply from May until autumnal frosts set in. Borders of Rhododendrons and Azaleas were most suitable for Lilies, and they also flourished among herbaceous plants and in the shelter of trees, while rockeries and artificial mounds suited some varieties, or they could be grown in any ordinary border where leaf mould could be obtained in quantity. Speaking of different kinds, Mr. Nash alluded particularly to *Lilium auratum*, and, referring to *L. giganteum*, said the only specimen he knew of in the neighbourhood was in the Royal Victoria Park. The Iris is evidently a great favourite with Mr. Nash, who said it was invaluable as a cut flower, competing in richness and variety of colouring with the most beautiful Orchids. There were upwards of 200 varieties, and when the whole collection was put together it formed a group unparalleled in beauty, for on one bloom might be found from twelve to twenty different shades all harmonising. They would thrive anywhere where they could get sufficient moisture. A cordial vote of thanks was passed to Mr. Nash for his paper.—(*Bath Journal*.)



— TOMATOES FOR PROFIT.—I can assure "Nemo" (page 234) that Tomatoes will pay in a house the size he mentions, and for summer growth he will want no fire heat, if he has other convenience for raising his plants. Plant them out in good loam 2 feet apart alternately, and train upright to stakes; pinch all side shoots, but leave the main leaves intact. Very little manure will be needed, but a dusting of soot occasionally will give tone to the foliage, as well as help to keep down the white fly. The best stimulant I ever tried for Tomatoes was fish manure; a sprinkling twice when swelling their fruit is ample. If there is sale for cut flowers in autumn, why not have Chrysanthemums planted out in the open ground to lift, and bring in the house after the Tomatoes are over?—T. ROGERS, *Melton Hill Gardens, Brough, E. Yorks.*

— THE WEATHER IN THE MIDLANDS.—The weather here during the last fortnight has been exceptional for the time of the year, very bright, and frequently quite hot in the sun, with the result that vegetation is more forward than I ever recollect it in March. Nights have, however, been cold; nearly 7° of frost on the morning of the 19th, and lighter frosts on many other mornings. Pear bloom on my south wall opened March 24th. I have, during twenty years' record, only one previous for March, while in two years it has been May 1st, and the average the first to the second weeks in April. The bloom is also more regular. Doyenné du Comice, usually a week or so later than Beurré Diel and other earlier bloomers, opened on the 26th inst. The bright weather is most enjoyable, and the bloom looks very healthy; but I



FIG. 51.—CALADIUM SOUVENIR DE PARO.

— BECKENHAM HORTICULTURAL SOCIETY.—The second of the present course of lectures being delivered before the members of this Society was given on Friday last to a large and deeply interested audience, the subject being the Tomato, and the lecturer Mr. A. Dean, who, so far as time would permit, covered wide ground in relation to indoor and outdoor culture, sorts, soils and training. Dr. Kirby presided, and referred to his early acquaintance with the Tomato in the island of Corfu, where forty-five years ago it was largely grown, also to the success which had attended his own gardener's efforts to supply him with Tomatoes up to February by sowing seed late, pushing the plants on to set fruit in the autumn, and ripening them in heat later. Some beautiful cut Tea Roses, Catherine Mermet, The Bride, and Ami Hoste were shown by Mr. Crosswell, gardener to W. H. Bullivant, Esq.; capital Amaryllises by Mr. Beech, gardener to R. Stevens, Esq.; and a charming bunch of Staphylea colchica from Mr. Webster, gardener to Dr. Kirby. Cordial votes of thanks were awarded.

fear the future. Last year the first Pear bloom did not open till April 10th, fortunately, as severe frosts and terribly cold winds followed, checking and saving the later blooms.—F. M. M., *Edgbaston.*

#### CALADIUM SOUVENIR DE PARO.

For general decorative purposes dwarf Caladiums are undoubtedly more useful than those which attain a height of 2 or 3 feet, and in most gardens are in great request. The variety depicted in the illustration (fig. 51) is of this type, for it rarely exceeds a height of 1 foot. It is, moreover, of an attractive appearance, and when exhibited by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, at the Drill Hall on May 3rd last year, the Floral Committee of the Royal Horticultural Society awarded it a first-class certificate. The leaves are comparatively large, deep red, with broad green margins slightly marked with yellow, and red veins. It is worthy of place in every collection.





MR. SHEA AND MR. GORDON.

It is not my intention to take any part in the discussion on the proceedings in connection with the recent election of the Chairman of Floral Committee of the National Chrysanthemum Society, but I must protest in the strongest possible manner against the implication running through Mr. Shea's letter that I have been associated with the dissensions and squabbles in the Society which have been discussed in your pages. I greatly regret that Mr. Shea should have thought proper to attempt to discredit me by innuendo, for which there has not been the slightest justification, or indeed anything that could be so construed. —GEORGE GORDON.

MR. DEAN AND THE N.C.S.

It is rumoured that Mr. Richard Dean is contemplating his resignation of the secretaryship of the N.C.S., because his indiscreet action on behalf of Mr. Shea's election as Chairman of the Floral Committee has been disapproved by this gentleman. We have also heard that the alleged intention, if carried out, may lead to some withdrawals of members. If this occur the cause will be apparent. We are not alone in thinking that Mr. Dean's mistake as a paid official in attempting to influence the election of Chairman in a private way would be small in comparison with the greater error he would commit by allowing himself to be the author of disruption. He is a very able man and an excellent Secretary when he confines himself to carrying out the wishes of a Committee which undoubtedly he did not do in the case referred to. The Society would, no doubt, survive his withdrawal, though it may not have made quite so much progress as his last Report implies.

POSSIBLY this last whip of the Secretary will be the means of putting things right, as it affects those who are on the Committee, and they will perhaps have a little sympathy for others. I think a National Society should certainly have a Secretary who will place all letters that are addressed to him for the Committee before that body; also one who will not send private letters to influence votes against any committeeman. —W. WELLS, *Earlswood*.

THE N.C.S. COMMITTEE *versus* GODFREY AND OTHERS.

THE thanks of Chrysanthemum growers are due to the Editor of the *Journal of Horticulture* for the fair and unprejudiced publicity he has given to the recent discreditable proceedings connected with the Committee of N.C.S., and I fear Mr. Shea is in error when he suggests that readers are becoming tired of the discussion. At any rate, it is not the case with those with whom I have come in contact, and few will consider the case honourably settled till a more satisfactory explanation is forthcoming. The awarding of certificates to new varieties of Chrysanthemums is of such importance to growers and exhibitors that members of the Floral Committee should be above a suspicion of partiality.

I should like to see more of our best growers—as Messrs. Molyneux, W. Drover, G. Drover, Flight, and many others—occasionally elected; we should then probably have fewer inferior varieties certificated annually to be sold at fancy prices, and after a year or two's careful growing consigned to the rubbish heap. In my opinion, certificates ought not to be awarded to new varieties till blooms can be shown in form and size equal, if not superior, to those already in commerce.

The N.C.S., it appears, has gained strength by the recent controversy, and if a better state of affairs can be brought about by the publicity given to what most people will consider highly discreditable proceedings, Chrysanthemum growers will, I am sure, tender their best thanks to the *Journal of Horticulture*. —G. TRINDER, *Dogmersfield Gardens, Winchester*.

JUDGING CUT BLOOMS.

MR. LAMBERT (page 240) misses the point of my objection to the method of judging stands of cut blooms by comparison. Were I certain that every bloom in stand A would be pitted against the same variety in stand B I should advocate the comparison method; but my argument is that never do two stands come in opposition containing the same varieties, and certainly never in the same order of arrangement to admit of their being compared readily. Where I hold that method of judging to be wrong is when one variety is pitted against another and at the same time the former is represented in both stands, but in such a position as to receive an injustice through being compelled to compete against a variety possessing points of merit not obtainable in the best grown bloom possible of the first named.

Adjudicating by an agreed code of points dispenses with haphazard arrangement of any particular variety. Every bloom is appraised on its individual merits, and recorded clearly for future reference, if necessary. It is not so in "comparison" judging. How can a judge so effectually satisfy the wishes of a disappointed exhibitor as to the merits of any particular variety in relation to its influencing the award when this

method is adopted? By carrying out a system of point judging reference can be made to any bloom in the stand, years after if necessary.

It is plain that Mr. Lambert's experience of point judging is limited, or he would not say "it means trusting to his mind's eye to carry size, colour of say twenty-four or forty-eight blooms to a distance," because just the opposite is the case. Every bloom is individually appraised, the total value of the stand in number of points determining its position, leaving the mind free for the next stand, and dispenses with the necessity of carrying stand after stand of blooms about the exhibition (no small matter when forty-eight classes are under consideration), very much impeded too by the public when they are admitted before judging is completed.

Mr. Lambert's method of granting a point for freshness after two stands are found equal comes quite as a revelation to me. From what I have seen of judges while making their awards, this point in a bloom is determined at first, and not left to decide the issue. If Mr. Lambert means by colour in relation to the arrangement of the blooms, or even to one stand having a greater variety than the other, I agree with the adding of an extra point; but if he means the colour, good or bad, of any bloom, then I do not agree with him, as that ought to be determined at first, as it is one of the salient points in a good bloom. Mr. Lambert is not quite clear on this latter point, but as he links colour with freshness the inference is that he means the colour of individual blooms.

At how many exhibitions does Mr. Lambert judge in one season where the number of incurred blooms exceed one that is deserving of the maximum number of points, or even in the Japanese section? Adjudicators with a wide experience inform me seldom is the case that more are found. When awarding the class prizes the best bloom is generally "spotted" by the number of points it merits. I should have no hesitation in awarding such a bloom the premier honour. Why judges carry such a bloom around for comparison before finally deciding the position of premier is to save time in carrying others to that "spotted," in case one should be met with deserving of an equal number of points; but as this is I may say almost unprecedented the difficulty of determining is easily settled.

A judge of experience would have no trouble in settling the question of superiority between two blooms no more than he would have in finding the strongest claim of one bunch of Grapes over that of another, but when twelve or more have to be decided, and all not on an equal basis, the method of defining the accuracy of judgment must be altered to meet the case. —SADOC.

## ROYAL HORTICULTURAL SOCIETY.

MARCH 28TH.

THE Drill Hall has rarely presented a more brilliant appearance than it did on Tuesday last, the building being full of exhibits, comprising stove and greenhouse plants, Ferns, Roses, hardy flowers, and Orchids. Fortunately, too, the weather was sufficiently bright to admit of their being seen to advantage.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); with Dr. Hogg, Messrs. T. Francis Rivers, G. Bunyard, Harrison Weir, G. Taber, T. J. Saltmarsh, A. Moss, G. Woodward, W. Warren, A. Dean, A. H. Pearson, H. Balderson, F. Q. Lane, J. Hudson, G. Wythes, W. Bates, A. J. Laing, and J. Wright.

Mr. Bannister, The Gardens, Cote House, Westbury-on-Trym, sent a dish of the Standard Bearer Apple that was shown in the autumn and granted an award of merit. The fruit had kept fairly well. The variety is of the Blenheim type, symmetrical, and no doubt a good culinary Apple. Mr. John Crook, Ford Abbey Gardens, Chard, sent a dish of Sturmer Pippin Apples that had been kept in a shed, and subjected to several degrees of frost. The fruits were firm, but possessed no flavour, as is generally the case with Apples that have been subjected to frost.

Mr. G. Wythes, Syon House Gardens, sent a box of Vicomtesse Hericart de Thury Strawberries, fine fruit, excellently coloured, and well flavoured. A cultural commendation was unanimously awarded. Mr. Wythes also sent a dish of the St. John's Fig, nearly ripe (vote of thanks). A similar mark of recognition was accorded to Mr. T. Osman, Ottershaw Gardens, for a dish of Strawberries, also a plate of white fleshy Mushrooms. Mr. S. Hardy, Ash House, Parsons Green, sent a collection of Mushrooms packed for market—very fine produce, for which a cultural commendation was awarded.

Mr. T. Lockie, The Gardens, Oakley Court, Windsor, sent an excellent brace of Lockie's Perfection Cucumber. The fruits were about 16 inches long, faultless in shape, and good in colour. They were cut on the 25th inst., the plants having been raised from seed sown January 9th. A cultural commendation was unanimously awarded. Mr. Harrison Weir sent Filberts gathered in 1891. They were kept in tins buried in the garden, and were fresh and firm, though with signs of germination apparent in some of them. (Vote of thanks.)

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); Rev. H. H. D'Ombain, Messrs. Owen Thomas, H. Herbst, R. Dean, C. T. Druery, G. Stevens, R. B. Lowe, G. Bause, J. Ross, G. Gordon, W. Furze, C. Jeffries, C. E. Shea, H. Turner, C. Noble, J. D. Pawle, G. Paul, H. B. May, J. Fraser, J. Jennings, R. Owen, G. Nicholson, and James Walker.

Mons. Henry de Vilmorin exhibited a few flowers from the Riviera, chiefly Anemones and Narcissi. Messrs. Paul & Son, The Old Nurseries, Cheshunt, had a splendid group of Roses in pots Lilaes, Amaryllis,



Aucubas, and hardy flowers. It was one of the most attractive features of the mee'ing (silver Flora medal). Mr. H. B. May contributed a collection of Ferns, and noteworthy amongst which were *Pteris serrulata densa*, *Adiantum Mariessii*, *Hypolepis Bergiana*, *Adiantum versailleense*, *Pteris Reginae cristata*, *Pteris serrulata gloriosa*, and *Leucostegia immersa* (silver Banksian medal). W. M. Bullivant, Esq., Beckenham (gardener, Mr. Cresswell), had a collection of finely grown *Cinerarias*, the plants being of great size and full of bloom (silver Banksian medal). Mr. W. R. Newport exhibited a collection of Stocks called Model White, carrying good trusses for the time of year (vote of thanks). Messrs. J. James & Son sent a collection of their *Cinerarias*, the plants being dwarf, and the quality of bloom very marked (silver Banksian medal). The St. George's Nursery Co. had a very extensive display of *Cyclamens*, of which they make a specialty, and which they grow exceedingly well (silver Flora medal). Mr. Moore, The Botanic Gardens, Glasnevin, sent *Hoya cinnamomifolia*, *Brownea grandiceps*, and *B. ariza*, the enormous and richly coloured flowers of the two latter being effective though faded. Capt. Torrens contributed the beautiful *Schizocodon soldanelloides*.

Messrs. Hugh Low & Son invariably make their mark when they exhibit, and their group on the present occasion was of the customary high quality. It consisted of stove and greenhouse plants, chiefly hard-wooded, such as *Boronias*, *Azaleas*, *Diosmas*, *Chorozemas*, *Acacias*, *Ericas*, *Eriostemons*, *Genistas*, *Pimeleas*, and others. These plants are not so popular as they used to be, but they are unquestionably beautiful (silver Flora medal). Messrs. E. D. Shuttleworth & Co., Limited, sent a group of healthy and well-flowered greenhouse plants bearing their usual mark of quality. They also had a number of Daffodils (silver Banksian medal). Messrs. J. Peed & Son had a mixed group of foliage plants and Orchids, all well coloured, well flowered, and in admirable condition (silver Banksian medal). Messrs. J. Laing & Sons contributed stove and greenhouse plants intermingled with a few Orchids. The *Clivias* and *Caladiums* which they grow so well were a prominent feature of it, but all the plants were clean, healthy, and attractive (silver Flora medal). Messrs. Robert Veitch & Sons sent *Rhododendron gloxiniaeflora* and *Olearia stellulata* (see awards). Messrs. James Veitch & Sons sent *Magnolia stellata* (Halleana) pink and white varieties, *Chionanthus virginicus* (cultural commendation), *Rhododendron Yellow Gem*, and several *Amaryllis*. Messrs. B. S. Williams & Son sent several fine *Amaryllis*. Messrs. Barr & Sons were represented by an extensive and beautiful display of Daffodils and other hardy flowers, most of the popular varieties of the former being shown (silver Banksian medal). The first prize in the competition for Daffodils went to the Rev. S. Eugène Bourne, Dunston Vicarage, Lincoln; and the third to the Rev. G. P. Haydon, Doncaster. Messrs. W. Cutbush & Son had a group of *Azalea mollis* and *Epacris* which lent a distinct and pleasing feature (silver Banksian medal). The Rev. E. H. Engleheart exhibited a collection of hybrid and seedling Daffodils of his own raising, many of which were very beautiful, and engaged the close attention of the Daffodil Committee.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); Messrs. J. O'Brien, De B. Crawshaw, H. M. Pollett, H. Ballantine, T. W. Bond, R. B. White, C. J. Lucas, W. H. White, E. Hill, J. T. Gabriel, T. B. Haywood, J. Jacques, Jas. Douglas, S. Courtauld, A. H. Smee, T. Statter, and Dr. Masters.

Orchids were shown somewhat extensively, and there was plenty to interest both general visitors and specialists. Several of the plants mentioned in the following notes are described more fully in "Certificates and Awards." Messrs. F. Sander & Co. had a diversified and delightful collection, noteworthy in which were *Cattleya Trianae alba*, *Odontoglossum Andersonianum guttatum*, several varieties of *Odontoglossum Pescatorei*, such as *picturatum* and *Model*, *O. Reichenheimi*, *Cattleya dolosa*, *Dendrobium nobile albiflorum*, *D. Dalhouseianum*, splendidly bloomed, *Cypripedium Rothschildianum*, *Oncidium fuscum*, *Spathoglottis Kimballiana*, and *Restrepia antennifera* (silver Flora medal). Sir Trevor Lawrence, Bart., sent an *Angraecum* species (cultural commendation), *Dendrobium micans* (*Wardianum* × *lituiflorum*), *D. Venus* (*nobile* × *Falconeri*), *D. superbum* Burkei, *D. anosmum* Dayanum, *D. cretaceum*, and *Odontoglossum Nötzlium* (*Cochlioda Nötzliana*). J. W. Temple, Esq. (gardener, Mr. Bristow), sent *Lycaste plana* and *L. plana Templae*. W. C. Walker, Esq., contributed *Odontoglossum Andersonianum* and *Cypripedium Boxalli*. G. R. le Doux, Esq., had *Cattleya intermedia Faustiana*, *Odontoglossum triumphans splendens*, *O. Andersonianum* variety, and *Cypripedium barbatum majus*. Messrs. Pitcher & Manda were represented by a small collection of *Cypripediums* and *Cattleya speciosissima*, Manda's variety. C. L. M. Ingram, Esq. (gardener, Mr. T. H. Bond), sent *Cypripedium T. W. Bond* and *C. compactum* × *C. candidulum* × *calurum*. W. R. Lee, Esq., sent *Dendrobium Wardianum album*, and Thos. Statter, Esq., contributed *Dendrobium nobile Storeri*, *Cypripedium Exul* var. *annamense*, and *Dendrobium heterocarpum*. N. C. Cookson, Esq., had *Dendrobium nobile*, Oakwood variety, *Dendrobium Sibyl* (*bigibbum* × *Linawianum*), and *D. Bryan*. H. J. Elwes, Esq., Andoversford, sent a basket of hardy Orchids, amongst which was *Ophrys sphegodes*, *Orchis tridens*, and *Calypso borealis*, the latter receiving a botanical certificate. Messrs. Heath & Sons sent *Odontoglossum excellens* × *triumphans* (cultural commendation). Messrs. J. Veitch & Sons sent *Dendrobium Alcippe* (*D. Wardianum* × *D. lituiflorum* Freemani). Baron Schröder sent several attractive *Odontoglossums*, and Messrs. W. L. Lewis & Co. contributed a small but beautiful mixed group. P. Crowley, Esq., sent a group comprising *Ada aurantiaca*, *Cypripedium villosum*, and a few other Orchids (silver Banksian medal).

## CERTIFICATES AND AWARDS.

*Cattleya speciosissima Manda's variety* (Pitcher & Manda).—A magnificent variety, the lip being flattened, circular, and about 3 inches across. The colour is rich magenta on a white ground. The petals were of enormous size, and with the sepals of a soft blush shade (award of merit).

*Odontoglossum Nötzlium* (Sir Trevor Lawrence, Bart.).—Note-worthy for its brilliant colouring, the sepals, petals, and lip being brilliant red, the column tipped with magenta. The flower is about 1½ inch across, and the plant of dwarf habit (award of merit).

*Cypripedium T. W. Bond* (C. L. M. Ingram, Esq.).—A cross between *Swanianum* and *hirsutissimum*. The lip is long and narrow, the petals curved, obtuse, and having the colouring of *C. hirsutissimum*. The dorsal sepal is broad, but pointed, being marked with lines of dots and a greenish ground (award of merit).

*Dendrobium Wardianum album* (W. R. Lee, Esq.).—A remarkable and beautiful variety, the sepals and petals pure white, the apical area of the lip also white, the throat yellow (first-class certificate).

*Dendrobium Sibyl* (N. C. Cookson, Esq.).—A cross between *D. bigibbum* and *D. Linawianum*, with drooping rosy mauve flowers, the throat white with a central blotch of yellow and crimson spots (award of merit).

*Dendrobium Bryan* (N. C. Cookson, Esq.).—A cross between *D. luteolum* and *D. Wardianum*, but the parentage of the latter is not very marked. The flower is of a uniform pale lemon hue, but the throat is lined with reddish brown. It is a decidedly attractive acquisition (first-class certificate).

*Cypripedium × microchilum* (J. Veitch & Sons).—A cross between *C. Druryi* and *C. niveum*, the former being the pollen parent. It partakes very much of the character of *C. niveum*, but the lip is much smaller. The flower is ivory white, the dorsal sepal and petals having a central bar of magenta, and lightly dotted with the same colour (award of merit).

*Amaryllis Siren* (J. Veitch & Sons).—A beautiful light orange red flower with rounded segments. One of the most perfect blooms yet seen (award of merit).

*Rhododendron Yellow Gem* (J. Veitch & Sons).—A beautiful variety, resulting from a cross between the Sumatra and Java sections. It has clear light yellow flowers 2½ to 3 inches across (award of merit).

*Magnolia stellata* (Halleana), pink variety (J. Veitch & Sons).—A soft pink variety of *M. stellata*, the outer portion of the petals much deeper in colour than the interior (award of merit).

*Olearia stellulata* (R. Veitch & Sons).—A dwarf sort, producing thick clusters of pure white starry flowers, attractive, and likely to prove useful (award of merit).

*Clivia Beechdale* (J. C. Geiselbrecht, Esq.).—A variety of exceptionally rich colour, and the truss fine. The hue may be described as a brilliant deep orange vermilion (award of merit).

*Rhopaloblacte hixande* (J. Laing & Son).—A little known but elegant Palm, which would prove useful for decorative purposes (award of merit).

*Schizopodon soldanelloides* (Capt. Torrens).—This is a beautiful little plant brought by the exhibitor from Miyanoshta, Japan, in 1891; named at Kew, and stated by the authorities there to have been the first living plant brought to England. It is a dwarf plant, growing but 2 or 3 inches high, and with soft rosy flowers with deeply lacinated or fringed segments (first class certificate).

*Cyclamen Princess May* (The St. George's Nursery Co.).—Soft rose flowers of large size, the plant dwarf and a free bloomer (award of merit for the strain).

*Brownea ariza* (Glasnevin Botanic Gardens).—A magnificent species with enormous flowers of a rich lustrous scarlet, and with glossy, fragile, lanceolate foliage (first class certificate).

*Scilla sibirica vera alba* (De Graaff Brothers).—A pure white variety, and a charming companion to the blue (award of merit).

*Amaryllis Lightning* (Paul & Son, Cheshunt).—A brilliant crimson variety, very rich in colour (award of merit).

*Lilac Alphonse Lavallée* (Paul & Son, Cheshunt).—A beautiful semi-double variety, with very large trusses of bloom, colour lilac (award of merit).

*Cereus Hoveyi* (F. Ross).—A most brilliant sort, with large flowers, colour deep red suffused with bluish magenta (award of merit).

*Aucuba japonica fructu-alba* (Paul & Son, Cheshunt).—A white-fruited variety of the type with green foliage, the berries large (first-class certificate).

*Amaryllis Ophelia* (B. S. Williams & Son).—A very distinct variety with pointed segments, ground colour white, flaked and dotted with carmine and edged with the same colour (award of merit).

## THE FLOWERS OF THE RIVIERA.

THE paper on the above subject by Mons. Henry de Vilmorin of Paris, was ably read at the afternoon meeting by the Rev. W. Wilks. Dr. Hogg occupied the chair. Owing to a serious illness Mons. de Vilmorin was prevented attending, but his son, Mons. Phillip de Vilmorin, was present to give any information respecting the text of his father's paper.

The essayist first noticed briefly the climatic conditions which prevail on the Riviera, and pointed out how favoured it was in being sheltered from the north winds by hills and mountains, and in having more sunny days by three to one than we have here in England. Sharp and protracted frosts were unknown, except in the very low lying



districts. Though the temperature was so favourable, protection for various plants was not by any means despised. This consisted principally of glass frames built with a centre bar and sloping almost to the ground, and having the ends stuffed with straw or fern. Greenhouses were by no means common, though many of the flower growers had built them, and which were mainly used for affording a constant supply of bush Roses, French Beans, Tomatoes, and Strawberries during the months of January and February. In these houses hot-water pipes were fixed in case of emergency, though, said the essayist, their use had very seldom to be resorted to, the growers depending on the natural influences of light and air to develop the plants and trees.

Foremost amongst the many trees grown in the Riviera for market purposes were the Australian Mimosas, and of these *Acacia dealbata* stood pre-eminent. The tree rapidly grows to a large size, and is during the months of January and February a beautiful sight. The soil most suitable to this tree is found only on the hills round Cannes, as it does not thrive on clayey soils. *Eucalyptus globulus* was also very largely grown for the markets, the sprays when covered with their white blooms being very effective. Roses, the essayist said, were a great feature and source of income to the inhabitants of the Riviera. The varieties grown for spring blooming were *indica* major and Banksian amongst others. Ten years ago the Dean of Rochester said that ninety-nine out of every hundred Roses grown in the Riviera were the Safrano variety, and the same per-centage holds good to-day. It blooms profusely all the year round, and is much appreciated by purchasers. Climbing Roses were also very largely grown on walls, and were very remunerative. White and yellow Marguerites were extensively cultivated, as were Pinks, Roman Hyacinths, Narcissi, Jonquils, hybrid Gladioli, *Allium neapolitanum*, Tulips, and Freesias.

Anemones were, said the essayist, indigenous to the Riviera, and as they carried well and revived in water, were grown by the acre. Two single varieties were still to be found wild—purple and scarlet, the latter being by far the most beautiful and in the greatest demand, and is consequently to be found in much less numbers. Violets were extensively grown, and Mignonette was in very great demand. The essayist, in conclusion, said that anyone who would go to the Riviera to spend their Easter holiday would be amply rewarded by the delightful flowers and the blue sky and sea which would welcome him on his arrival.

A hearty vote of thanks was accorded to Mons. de Vilmorin for sending his admirable paper, to Rev. W. Wilks for reading it, and to Dr. Hogg for presiding at the meeting.

### IS SOOT A GOOD MANURE?

IN reply to "W. C." (page 199) I may say that soot is a very excellent fertiliser as well as purifier of the soil. During the last twenty-two years I have annually used large quantities of soot in various ways in the gardens here with most satisfactory results. All ground to be cropped with Onions, Parsnips, Carrots, and Turnips is surface-dressed with soot immediately before drawing the drills for the reception of the seed; also before making plantations of Lettuce, Parsley, and Carnations, plants liable to the attacks of the grub and Onion maggot, sufficient soot is strewn over the ground to discolour it.

Before transplanting Cabbages, Cauliflowers, Savoys, Broccolis, and Borecoles, the roots of the plants are dipped into a "puddle," into which a double handful of soot has been stirred. This renders the roots distasteful to the attacks of the grub and other creatures injurious to root growth. Thus it is that our crops of Onions, Parsley, and similar things are never attacked by the maggots or wireworm, the ground consequent upon the frequent applications of soot being quite free from those troublesome pests. So much for the efficacy of soot as a purifier of the soil and preventive to the attacks of insects on the roots of plants, not only growing in the open ground but also in pots and tubs.

Anyone desirous of demonstrating the efficiency of soot as a manure can easily do so by leaving space for a few rows of Onions undressed with soot and noting the result. The growth resulting from seed sown in the ground over which soot had been scattered will be of a rich dark green colour, while that obtained from the undressed ground will be less vigorous and of a comparatively pale green colour, the colour of one lot of plants being markedly distinct from the other. Again, top-dress a portion of an impoverished lawn with a sifted mixture consisting, say, of three parts good soil and one of leaf mould, and to this mixture add soot at the rate of a gallon of the latter to a bushel of the former before applying it to the remaining portion, and the resulting growth will afford conclusive evidence in favour of soot being a valuable fertilising agent. A good surface dressing of soot pointed into a Vine or Peach border with a five-tined fork before applying clear tepid water will greatly assist in the production of crops of a high order.

A peck or two of soot tied in a piece of coarse cloth and then dipped into a tub of tepid water, and squeezed well into it for a few minutes before applying it at the roots of Pine Apple plants, fruit trees, Roses, Camellias, and Orange trees growing in pots and tubs, will prove very beneficial and productive of good results. A solution of lime and soot applied to Peach walls with a stiffish whitewash brush before nailing the trees thereon early in spring will tend to destroy the larvæ of insects which would otherwise prey on some of the ripe fruit in the autumn. Solutions of the same mixture applied through the garden engine in winter to fruit trees which are covered with moss and lichen will not only destroy those parasites but will also kill the larvæ of insects located

therein. A sprinkling of soot put over the drainage in pots being prepared for the reception of Vines and other plants which have to be plunged in leaves will prevent the ingress of worms, and at the same time conduce to the well-being of the plants.

A mixture of soot and lime placed round young Melon and Cucumber plants about 2 or 3 inches from the stems will ward off the attacks of slugs. A line of the same mixture strewn along between the Box edging and plantations of young Lettuce plants will serve a like purpose. It may be used in a similar manner on each side rows of Peas and Cauliflowers, encircling the plants of the latter. The soot should be kept in the dry until used. Here, having all the soot from the Castle and other buildings on the place for use in the garden, I have a house for its storage.—H. W. WARD, *Longford Castle*.

ACCORDING to "Griffiths," soot is a good manure when applied as a top-dressing, not only to agricultural produce and grass land, but is also valuable for vegetable crops. Nicholson says:—"The fertilising effect of a top-dressing of soot is very decided, and seems to be due in a great degree to the presence of sulphate and chloride of ammonium." Apart from its use as a manure, it is decidedly valuable as a remedy against larvæ that lie underground during the day and crawl up to feed upon the plants at night. Soot is considered to be an excellent stimulant for Chrysanthemums, restoring the lost colour to the leaves when these have become pale, applied either as a top-dressing or in liquid form to the roots, or even used for syringing on the foliage. Chrysanthemum cultivators in the neighbourhood of Liverpool use soot in large quantities as a top-dressing to their plants. Market gardeners in some instances depend solely on soot as a manure for their Gooseberry trees, and with good results.—E. M.

### EXPERIENCES WITH BROCCOLI.

INQUIRIES have been made for experience with Broccoli in hard and in loose land, also whether midseason or late varieties stand severe weather best. I believe in good firm soil for all the Brassica family, and never think of digging the ground for them. I would prefer planting with a crowbar, and there are few seasons when it is not used for the purpose. At the same time, I do not consider it absolutely necessary, so far as my experience goes.

On August 6th last year I planted about 300 Late Queen and Methven's June, after Potatoes on land that was burned two years ago, and which is now very porous. The plants were heeled over to the north the second week in November, and another 100 Late Queen lifted out of an orchard and laid in beside them. Out of the whole number I do not think twenty have been killed, while close beside them Cooling's Matchless in the open succumbed to the frost. Some of Model are quite fresh. The seed was sown on May 4th. I find it little use to grow many midseason Broccoli, and have not found one equal in hardiness to the late varieties.

In 1891 I planted about 500 Broccoli after the Strawberries were cleared off, and the ground was so hard that we had to make drills with the pickaxe (as being the easiest tool to work), and fill them with liquid manure to soften the soil. The plants grew dwarf, and I thought they would not need laying down, so having to clear a pit out I put spent hotbed manure on as a winter mulch, covering the stems well, but in the end I only saved about half of them. The varieties were Model, Late Queen, and Methven's June. The first two came in about the same time, while the other followed. The above varieties are the best I have tried.

I have visited two gardens lately and noted the Broccoli, more especially the effect of early sowing and planting too close. Some sorts were all gone, others varied to half, while another sharp frost would have destroyed the remainder. I have come to the conclusion that it is best and safest neither to sow nor plant too early; lay all to the north before severe weather sets in. If done too soon the leaves turn up again, and a heavy fall of snow then breaks them down, while if laid almost flat the leaves are turned over and protect the crowns. Some may think by this treatment the heads will be small, but that is not always so, and it is better to have small heads than none.—YOUNG HAND, *Somerset*.

### CRYSTAL PALACE SPRING SHOW.

MARCH 25TH.

THE Exhibition of spring-flowering plants, held at the Crystal Palace on the above date, was of a bright and diversified character. Taken as a whole the exhibits were of good quality, and in some classes the competition was somewhat keen. Hyacinths were specially fine, as they appear to be generally at most spring shows this year, and the same remark applies to Tulips. Cyclamens also made a good display, as likewise did the miscellaneous exhibits.

Hyacinths and Tulips in the open classes were exhibited in grand form. For thirty-six Hyacinths Mr. J. Douglas, gardener to Mrs. Whitbourne, Great Gearies, Ilford, was first, showing a splendid collection of well-developed spikes. The best of these were Lord Derby, Koh-i-Noor, Electra, King of the Blues, Sultan, Mont Blanc, La Grandesse, Vuurbaak, and Bird of Paradise. Messrs. H. Williams & Sons, Fortis Green, East Finchley, were second, the spikes being fresh, but not quite so large as in the first prize collection. Ida, Fabiola, Czar Peter, and Lord Derby were specially good. Messrs. B. S. Williams & Son, Upper Holloway,



secured a third position. There were five exhibitors in this class. In the amateurs' class for twelve Hyacinths Mr. H. Shoesmith, gardener to M. Hodgson, Esq., Shirley, was first, showing amongst others good Queen of the Blues, King of the Blues, Lord Derby, Czar Peter, and Gigantica. Mr. F. Barr, West Norwood, was second. Mr. Douglas was again first in the class for thirty-six Tulips, three in a pot. These were remarkably well grown, and carried fine flowers. The best varieties were Vermilion Brilliant, Proserpine, Keizers' Kroon, Joost Van Vondel, and Van der Ncer. The second prize went to Messrs. B. S. Williams for a collection of well-developed blooms, Messrs. H. Williams & Sons being third. There were four entries in this class. Mr. H. Shoesmith was the only exhibitor of twelve Tulips in the amateurs' section, but was awarded first prize.

Narcissi were not very extensively shown. Mr. J. Douglas was awarded first prize for twenty-four Polyanthus Narcissi, three in a pot, staging an even collection. Conspicuous amongst these were Her Majesty, Jaune Supreme, Bathurst, Gloriosa, and Grand Monarque. There was no other exhibitor in this class. For twenty-four Daffodils, Messrs. H. Williams & Sons were awarded first prize. Princes, Van Zion (double and single), were among the best of these. Mr. J. Gibson, gardener to Mrs. Berkeley James, The Oaks, Carshalton, was first for twelve Narcissi (Daffodil section). Mr. H. Shoesmith was second.

Cyclamens were best shown by Mr. Thomas Prestridge in the open classes, this exhibitor being awarded first prize for thirty-six plants. The specimens staged were well flowered. The second prize went to the St. George's Nursery Company, Hanwell. Certificates of merit were adjudged Cyclamens The Duchess (pure white), and Princess of Wales (rosy pink) in this exhibit. Mr. F. May, St. Margaret's, Twickenham, was third. Mr. W. Slogrove, Gatton, Reigate, was first in the amateurs' section for twelve of Cyclamens; Mr. J. Hughes, gardener to G. R. Higgins, Esq., Eastlands, Dulwich, S.E., second; and Mr. C. Lanes, gardener to E. H. Coles, Esq., Burnwood, Caterham, third. Mr. A. H. Morle, Fenchurch Street, E.C., had the best eighteen pots of Mignonette as grown for market; the second prize going to Mr. A. White, Stanmore Park Gardens, Stanmore; Mr. A. Carter, Penge, was third. Mr. J. Jannock, Dersingham, Norfolk, was first with Lily of the Valley, staging plants with well developed spikes. Messrs. H. Williams & Sons were second, and Mr. Morle third. For twelve Amaryllis Messrs. G. Paul & Son and J. Douglas were the only exhibitors. Messrs. Paul and Son secured the first prize, showing some very fine seedlings, and George Elliott, Titian, Princess, and W. Coomber. Certificates of merit were awarded the two last named. Mr. Douglas's flowers were smaller but fresh. Mr. Douglas was, however, awarded first prize for six Amaryllis.

Cinerarias were good, although not extensively staged. Mr. J. Ford, gardener to Sir C. Pigott, Bart., Wexham Park, Slough, was first with twelve plants, staging well flowered specimens. Mr. Douglas was a close second, and Mr. J. Slater, gardener to J. Nothard, Esq., York House, Lower Sydenham, was third. Mr. R. Wells, Longton Nursery, Sydenham, was awarded first prize for twenty-four greenhouse Azaleas. The plants were rather small, but profusely flowered. Primulas were not shown in first-rate condition, those staged by Mr. J. Ford being the best.

For a group of flowering and foliage stove and greenhouse plants Messrs. J. Laing & Sons, Forest Hill, S.E., were adjudged premier honours for a charming arrangement. This group comprised, among other things, Palms, Clivias, Caladiums, Ericas, Azaleas, Ferns, and Orchids. Conspicuous amongst the latter was a plant of *Cypripedium Elliotianum*, to which a certificate of merit was awarded. Messrs. J. Peed & Sons, Roupell Park, S.E., were placed second for a well arranged group, Messrs. B. S. Williams & Son, Upper Holloway, being third.

Miscellaneous exhibits also made a good display. Messrs. W. Cutbush & Sons, Highgate, sent a large group of greenhouse flowering plants, which formed quite a feature in the Exhibition. Messrs. G. Paul & Son sent a number of Roses in pots, and Messrs. Ryder & Sons, Sale, some *Primula Sieboldi* and new floral menu cards. Messrs. W. Paul & Son, Waltham Cross, sent a dozen boxes of Camellia blooms and some Roses in pots. Certificates of merit were awarded to Roses Christine de Noüe (deep pink), and Lady Henry Grosvenor (white, blush centre). Mr. J. Jannock, Dersingham, sent some pans of Lily of the Valley, the flower spikes being very fine. Bouquets of Anthuriums and Clivias were staged by Messrs. J. Peed & Sons, who also had Anthurium Roupelli, A. Weaveri, A. Knighti, and *Pteris Peedii*, to which certificates of merit were awarded. Mr. Hardy, Parsons Green, sent a number of baskets of Mushrooms cut from the open air, and the St. George's Nursery Co. staged a collection of Cyclamen.

#### GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, London, W.

#### UTRICULARIA RHYTROPHYLLA.

WHEN well grown some of the most notable of the Bladderworts are exceedingly pretty, and should be more frequently seen in cultivation. One of the best of these is that depicted in the illustration



FIG. 52.—UTRICULARIA RHYTROPHYLLA.

(fig. 52), viz., *Utricularia rhytrophylla*. The specific name is apparently derived from a Greek word referring to the long, narrow, strap-like leaves, but the chief character of the plant rests in the flowers. These are large, of a fine purplish hue, with an orange-coloured projection at the base of the broad rounded lip-like portion, and are borne in slender graceful racemes from the base of the plant. It thrives well in small baskets of peat and sphagnum suspended from the roof of an intermediate house.



#### FRUIT FORCING.

**Pines**—Suckers or plants which were started at the beginning of March will have pushed roots and must not be subjected to more bottom heat than 90° at the base of the pots, raising these and placing some loose tan about them so as to allow the heat to escape, taking care to avoid checks. Preparations should be made for shifting the plants into the fruiting pots when they have filled the present ones with roots.



Use 9 or 10-inch pots for Queens, 10 or 11-inch for Smooth-leaved Cayenne, and 11 or 12-inch for Providence, watering the plants a day or two previously so as to have the soil moderately moist when they are potted. This will not be required for another ten days or a fortnight, but the soil, good fibrous loam, should be had under cover, the pots and a fermenting bed be prepared. The bed in which the plants have been started may answer by replenishing it if needed by the addition of fresh tan, mixing it with the old to a depth that will afford the temperature required—namely, 95° at the base of the pots until the roots reach the sides, when 90° is more suitable. Keep the air about such plants well charged with moisture during the time the house is closed, employing no more fire heat than is absolutely necessary to maintain a temperature of 70° to 75° on mild nights. Ventilate slightly at 80°, liberally at 90°, closing with sun heat at 85°, at which time syringe the plants. Fruiting plants, which should not be syringed when they are in bloom, require similar treatment. Water the plants as needed, examining them twice a week for that purpose.

**Cherry House.**—Trees that have set a heavy crop should have the fruits thinned with scissors, removing the smallest and ill-shapen, and as they will be less vigorous than those with fewer fruit, the demand for nutriment will be greater, and whilst they will be benefited by the application of liquid manure, those lightly cropped should have water only. Ventilate freely at 50°, and fully at 60° to 65°, and employ fire heat only to maintain the day temperature at 50° to 55°, with a little air, and 50° or 5° less on cold nights. Syringe the trees twice a day after the fruit is set and swelling, keeping the border moist by damping it whenever the surface becomes dry. When the shoots have made four or five joints, pinch out their points to form spurs; growths required for furnishing the trees should be tied in position early, and be carefully trained in their full length. Keep a sharp look out for grubs on the leaves, and aphides must be kept under by repeated fumigation with tobacco paper, as if they get much hold they are not only difficult to exterminate, but spoil the appearance of the fruit. Over-fumigation seriously cripples the foliage, and must be avoided by moderate doses on two or three consecutive evenings, having the foliage dry. Trees in pots must be well supplied with water and have top-dressings of loam and manure, with a sprinkling of "artificial" occasionally, and liquid manure twice a week.

**Melons.**—Attend to thinning, tying, and stopping the shoots twice a week. Plants growing in beds over hot-water pipes require more water than those having the bottom heat supplied by fermenting materials. Plants swelling their fruit will need copious supplies, and if the roots are in shallow or narrow borders with ample drainage tepid liquid manure in a weak state should be given whenever the application of water is necessary, and it will compensate for the limited root action; but that may be accelerated by top-dressing of loam, and a sprinkling of superphosphate occasionally. Commence ventilating at 70° on fine mornings, always at 75°, and increase it with the rising temperature, keeping it at 80° to 90° in the daytime from sun heat, closing between 85° and 90°, and so as to run up to 95° or more, with plenty of atmospheric moisture, a high temperature and plenty of moisture being necessary when Melons are swelling. Maintain a night temperature of 65° to 70°, and 70° to 75° by day artificially. Place the necessary supports to the fruits.

Succession plants will need frequent attention in training and regulating the growths. They should be trained with a clear stem to the trellis, rubbing off all the side shoots as soon as discernible, and not stopping the leader until it has grown one-third across the trellis if trained on the extension system, or two-thirds on the cordon method. In the former case the main shoots are trained 12 to 15 inches apart and the laterals spread over the space between without crowding; but on the cordon plan every alternate lateral on opposite sides of the leading shoot should be removed to prevent crowding. The laterals will show fruit at the second or third joint. A somewhat dry atmosphere should be maintained when the plants are in flower, and until they have set the fruit, impregnating the flowers every day as they become fully expanded, stopping the laterals at one joint beyond, until a sufficient number for the crop are obtained on each plant of the same stage of growth.

**Melons in Pits and Frames.**—Where the plants are trained over the surface of the beds young plants will need stopping at the second or third leaf, and the shoots resulting being reduced to four train two to the front and two to the back of the frame, stopping them when 15 inches from the sides. It will be necessary to thin or rub off the laterals to some extent so as to prevent overcrowding, keeping the collars free from growths, and fertilise the flowers about midday on fine days when they are fully expanded, stopping at the same time one joint beyond the fruit. Sow and plant in accordance with the extent of the establishment. Attend to the linings at weekly or such intervals as circumstances occasion, and protection over the lights will be necessary at night as a means of retaining the heat by preventing radiation from the glass.

**Cucumbers.**—Shading for an hour or two at midday when the sun is brightest will prevent the foliage flagging, and is absolutely necessary after a period of dull weather to prevent the plants receiving a severe check, if not actual injury to the foliage. Assist plants in full bearing with applications of weak tepid liquid manure, and supply a little fresh loam to the roots. If horse droppings are used they must be previously sweetened, and not applied too abundantly, nor too often, or it will injure the foliage. Stopping and training must be attended to at least once a week. Plants that have been in bearing for any length of time should have the old exhausted growths removed with a small fork, not

injuring the roots, and replacing it with fresh soil—lumpy and rich, previously warmed—the plants will continue to supply good fruit some time longer, the exhausted growths being cut out, and fresh bearing shoots encouraged.

If worms are troublesome expel them with soot water, half a peck to thirty gallons of water, or sprinkle a little superphosphate on the surface occasionally. Canker at the collar and in the stems may be subdued by rubbing quicklime into the affected parts. Damp the floors about 7 A.M., and again at 3 P.M., syringing the plants gently on warm afternoons. Maintain a night temperature of 70°, 5° less in the morning, 70° to 75° by day artificially, keeping through the day at 80° to 90° from sun heat, and close sufficiently early to run up to 90°, or even 100°, with abundance of atmospheric moisture. Ventilate early and moderately, avoiding sudden changes of temperature, and above all cold currents of air, which cripple the foliage, stunt the fruit, and cause it to swell irregularly or die off at the end.

**Cucumbers in Pits and Frames.**—A good degree of heat should be kept by the renewal or application of manure linings, taking care to avoid rank steam. Supply water carefully and moderately and early, for the nights are yet cold, employing thick night coverings. Train the shoots rather thinly, pegging them down as required, stopping one joint beyond the show of fruit. Add fresh warm soil to the hillocks or ridges as the roots extend. Ventilate early so as to get a change of air and the foliage fairly dry before the sun acts powerfully upon it, not lowering the temperature, but keeping through the day at 80° to 85° from sun, and close early in the afternoon, no harm accruing if the heat rise to 90° or 95°. Rank steam, however, must be guarded against, having a little ventilation constantly in case danger be apprehended from it.

**Strawberries in Pots.**—April is the principal month for forced Strawberries, the season then being at its height, and the labour entailed in supplying water and nourishment at the highest pitch. East winds are very prevalent and cutting in spring time; these and sharp winds from any quarter blowing directly on the berries in the early stages of swelling cause them to become dried and brown, so that they do not swell well afterwards. Neglect of watering will also have a similar effect on the fruit. Great attention must be given to this, examining the plants at least three times a day in bright weather, and whenever a plant needs water supply it thoroughly, alternating with liquid manure. Plants to furnish fine fruit should have the flowers thinned to a dozen or so on each plant, or when very fine examples are required the plants showing the largest flowers should have them reduced to six or eight. The plants should be brought forward in gentle heat in the first stages of swelling, affording plenty of atmospheric moisture while it remains green, but when it becomes whitish green increase the night temperature to 65°, 70° to 75° by day artificially, and 80°, 85°, or 90° on sunny days, continuing this until the fruit becomes red all over, when the temperature should be lowered to a minimum of 60° and a free circulation of warm rather dry air maintained, with water only at the roots to keep the foliage fresh, will be necessary to secure flavour.

#### THE KITCHEN GARDEN.

**Forced Asparagus.**—Supposing that forced Asparagus must be forthcoming till the open air produce is available, it will be necessary in many cases to lift more roots and put these in gentle heat. Place them direct into rich moist soil in preference to any that is poor or dry. In order to thoroughly exhaust the earlier started roots, prior to throwing them away as being of no further service, force gently and keep the soil about them constantly moist. Good early produce can be had by forcing Asparagus where it is permanently planted in narrow raised beds. If a deep trench is at once dug on each side of the bed and filled with moderately hot manure and leaves, the bed being further enclosed with boards, and either mats or glazed lights, there will be a gain of about fortnight, or enough to repay for the trouble taken.

**Asparagus Beds.**—Where the old fashioned plan of giving an autumn dressing of manure, the sides being chopped down, and the soil distributed over the manure, is still adhered to, the beds should be put into good order for the season. The shoots would come through the dressing and be all the better for the additional length of stem, but would be late, while the side roots, already mutilated in the autumn, would further suffer from exposure to sunshine and drying winds. Therefore lightly fork over the beds, working or raking some of the dressing right and left so as to well cover the sides. Asparagus roots ought not to be confined to narrow bounds, and if the alleys between raised beds are full of roots on no account injure the latter by digging and cropping with Cauliflowers. It is a common, but not economical practice.

**Manuring Asparagus Beds.**—Asparagus very often gets more manure than it really needs; in fact, heavy soils are not unfrequently rendered quite unsuited to the crop, owing to the free use of manures. If nothing but solid manure has been applied of late years, dispense with this for once, and give a dressing of newly slaked lime, applying this at the rate of 2 bushels to the square rod, lightly forking it into the surface. In many instances the roots and crowns are too near to the surface, where they are easily injured by spring frosts and summer drought. These ought to be dressed with short partially decayed manure; this, in its turn, being surfaced with fine soil. Supposing the crowns are covered with not less than 3 inches of fine soil, loosen this with a fork, and top-dress with short manure, this answering the three-fold purpose of a protection from spring frosts, fertiliser, and summer mulch. Salt is the manurial dressing most often applied, but it is quite unsuited to soils of a clayey nature, as it causes them to run



together badly, cracking following in due course. A too free use of salt is also responsible for many gaps in beds. Where the soil is light in character just loosen the surface, and then whiten it with coarse salt. Salt and Peruvian guano in equal quantities, applied at the rate of 8 lbs. to the square rod, suits medium soils admirably, so also does a light surfacing of nitrate of soda occasionally. Fish manure has been found very suitable for the beds generally, and this, soot, and guano are among the best dressings that can be applied to heavy soils.

**Seakale.**—This will soon be available from the open ground, the crowns in this case being heavily moulded over, or covered with pots, ashes, leaves, or other substitutes. In the former case the covering is frequently too slight, the Seakale growths pushing through, and the tops spoilt by exposure to the light before being observed. Therefore cover the rows with a ridge of soil of some kind, 15 inches high and as much through at the base. Any not partially covered ere this will have so much purple in the points as to be past blanching, but if allowed to grow naturally, and cut over before the flower heads are far advanced, a very succulent, mildly flavoured vegetable will be had. During the first fortnight in April is a good time to either sow seed or form a fresh plantation with root cuttings, the latter plan being the simplest and best. Therefore save all the thongs or strong side shoots attached to the old roots lifted for forcing, and if need be trace out and remove some from those still in the ground. All thongs should be near the size of a man's little finger, and about 4 inches long. Take a slanting snip off the thinnest end or that part to be buried the deepest, and bed them in rather thickly in boxes of light soil or sand. If placed in gentle heat for a few days the tops will callus and form buds, and root-action also commence, when if they are early planted out there will be fewer failures than when the cuttings are dibbled out direct where they are to grow. If it is desirable to largely increase a small stock of Lily White it will be found that quite stout roots will develop into plants if given the benefit of gentle heat, and these may be further split up.

**Seeds to be Sown.**—If the earliest sown Peas from any cause come up badly sow more seed at once in 3-inch pots, place in heat, and keep constantly moist, and serviceable plants will soon be ready for filling up the blanks. According as the earliest and second early Peas come through the ground make other sowings of successional varieties, it now being time such excellent varieties as Telephone, Duke of Albany, Criterion, Huntingdon, and such like were sown. With these might also be sown one or more of the later or main crop varieties, a good natural succession resulting. Sow Spinach at the same time. More Broad Beans, including the Windsor type, ought to be sown; but it is yet too early to sow Kidney Beans in the open, though a few dozen or scores of plants might well be made ready to succeed early Potatoes, according as these are cleared out of pits. Onions should be sown directly the ground is in a free working state, and so also ought Parsnips. Seed of Early Horn Carrots should be sown on a warm border, and with these Radishes may also be grown, the drills for Carrots being drawn 9 inches apart, and between these for the Radishes. Sow Leeks at once. If no Brussels Sprouts, Autumn Giant Cauliflower, and Veitch's Autumn Protecting Broccoli have been raised under glass, sow seed at once on a warm border, and net over if small birds are troublesome. Sow early and main crop Lettuces in drills 9 inches apart, and the ground being fairly rich some of the plants resulting may be allowed to heart in where they are raised.

#### PLANT HOUSES.

**Pelargoniums.**—Give the earliest plants that are showing flower a little artificial manure on the surface of the soil at intervals of two or three weeks until they have practically done flowering. Be careful not to allow the plants to become dry, and watch closely for aphides, and destroy them by fumigating with tobacco smoke directly they make their appearance. Large plants that are growing freely should have their shoots tied out, so that they will not crowd one another. Any of these plants that need more root room should be potted at once. Those required for the latest flowering, or any plants that are weak, may have the points of their shoots removed to induce them to break again into strong vigorous growth, which they will do if given abundance of air.

**Zonal Varieties.**—There should now be a plentiful supply of these plants in bloom, and in light airy positions they will continue to flower for a long time, providing stimulants in a weak state are given occasionally, or artificial manure is applied to the surface at intervals of three weeks. Plants in 3-inch pots, and that are needed for succession, should be placed into 5-inch pots. Give plenty of air to encourage a firm, sturdy growth. For autumn and winter flowering the necessary batches of cuttings should now be inserted. Place the cuttings singly in thumb pots, and in a short time they will root if placed in a structure where the temperature ranges about 60°. Cut back plants that have done flowering or from which cuttings have been taken, keep them on the dry side until they break into growth. Those cut back some time ago may have the old soil shaken from their roots, and the plants repotted in the same size pots. Keep these close until they are rooting freely, when more air should be given them.

**Fuchsias.**—Do not stop again the shoots of the earliest plants, but allow them to grow and come into flower. The later plants that were cut back are growing freely. The shoots may be again stopped, and the plants placed into larger pots if they need it. Plants that are just rooted may be placed into 3-inch pots. Another batch of cuttings should be inserted if sufficient stock has not been raised.

**Lilium Harrisii.**—The earliest plants may be pushed forward in gentle warmth if the flower buds are fairly well developed and the plants

are wanted in bloom. Do not hurry later plants that are not yet showing their flowers; if hurried in this stage the flower buds instead of coming forward are very liable to turn yellow. These plants are very subject to aphides, and should be destroyed directly they make their appearance.

**Hydrangeas.**—All the later plants that were rooted with buds in small pots should be placed into 5-inch without delay. Place the small plants down to their lowest leaves so that they are furnished to the base when their truss of bloom is developed. Do not hurry plants of *H. paniculata*, allow them to grow on steadily in the greenhouse.

**Spiræas.**—Lift and pot a number of these plants and bring them forward as may be required. It is a good plan to pot these plants for late flowering and then plunge them behind a north wall to retard them as much as possible. Allow *S. astilboides* to come into bloom under cool airy conditions. These plants will be valuable for the conservatory after the latest batches of *S. japonica* are over.

**Callas.**—Young plants in 3-inch pots may be placed into 5-inch, in which they will be thoroughly established before the time arrives for planting them out. These will make grand plants for early flowering. Some of the old and latest flowering plants can then be thrown away unless retained for the same purpose again. It is surprising over what a lengthened period of the year the blooms of this plant can be had by growing the plants in batches and subjecting them to different treatment.

**Azaleas.**—As these plants go out of bloom place them where they can enjoy warmth and moisture to start them into growth. Be careful that they do not become dry at their roots. Those intended for late flowering should be retarded in a structure with a north aspect. If plants cannot be given this accommodation ventilate the house in which they are growing abundantly, and apply a light shade during the hottest part of the day. Watch for thrips, and destroy them at once should any make their appearance. A weak solution of tobacco water, with 1 oz. of softsoap to the gallon, intermixed, and a piece of washing soda the size of a Cob nut. All plants that have flowered, and have fairly started into growth, may be potted if they need more root room. These plants do well in peat and coarse sand, or in leaf mould and fibry loam in equal proportions, with sand added. In either case the pots should be well drained, and the soil pressed firmly round the sides of the old ball. Water carefully for some time after potting, but syringe freely amongst the pots.

## THE BEE-KEEPER

### APIARIAN NOTES.

On the morning of March 20th the thermometer stood at 22°, and by 3 o'clock P.M. had only reached 40°. On the following four mornings it registered 26°, rising gradually to 62° throughout the day, all these days being calm and cloudless, a happy change to what we have been long accustomed to, the bees enjoying and taking advantage of it in vigorous style. The late Croci and numerous other garden flowers, together with the profuse bloom of the Tussilago and Willows, supplied large quantities of pollen and honey. It is many years since we experienced similar weather for so many days during the spring.

Bees with plenty of stores proceed with their internal economy unmindful of stern blasts and low temperatures, and I have no casualties to report amongst my stock. Even nuclei that contained very few bees in the autumn are healthy and working vigorously. Strong stocks are able to store surplus honey should we be favoured with several weeks' sunshine.

Early swarming will follow such conditions, and many stocks indicate they are well advanced. Although novelty has great attractions for some, it is not inappropriate to mention here that swarming is the most natural as well as the most profitable system of keeping bees; but it must be borne in mind that there are two forms of swarming—early and late. The former takes place only when previous arrangement and management have been well ordered, and it was indeed ludicrous to read from an author last year that it was early enough when past midsummer to commence feeding our bees so as to be profitable; and yet this author claims to have been the means of diffusing knowledge in practical bee-keeping amongst the million. It is an old adage, but a homely one, to "make hay while the sun shines." It is only through sunshine that bees can gather honey, so do all in your power to have them in number when it is likely to shine. Feed when bees require it, but withhold food when it is not needed.

Bees advance and decline more with the times of the year than from the earliness or lateness of the seasons or localities. Doubtless in sheltered places with a profuseness of flowers they come to the swarming point earlier than those in exposed situations, but the difference is due to the latter eating out their eggs and larvæ.



The case need not be discussed. Strict attention to good management of bees in the autumn very often makes up for all the difference in early or late swarms from hives in exposed or sheltered situations. Where very little honey is to be had until the end of July and beginning of August the swarming system is the most profitable as opposed to bees that are kept in early districts.

Adopt the best means to induce the stocks to swarm early, not later than the end of June, two swarms from each stock. By careful management the whole of these, stock and swarms, will be in excellent condition to gather honey by the beginning of August, equal to early non-swarmer, and the prime swarm by the middle of July. The nuclei system should be started by the end of May, and then by the introduction of a youthful laying queen the best results follow. In early districts, but where the flora is of short duration, the doubling of swarms, or working on the non-swarmer system, or the working of two or more into one, is the safest and surest course to pursue for a large yield, and the nuclei system is the best to prevent swarms when honey is wanted. If bee-keepers situated in early districts intend removing their bees to the Heather, the system of increase as advised above meets all the requirements of making the most at their disposal.

The extraordinary fine weather we are enjoying reminds us of the spring of 1840-41, and the fine summers that followed encourage us to prepare for the best, but we must always keep in view the fact—no bees, no honey.—A LANARKSHIRE BEE-KEEPER.

#### TRADE CATALOGUES RECEIVED.

Knight, Clark & Co., Westham Nursery, Langney, Eastbourne.—*New and Choice Plants.*

John Smith, Royal Label Factory, Stratford-on-Avon.—*The Imperishable Stratford Labels.*



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Sulphate of Iron Added to Sewage (J. F. C.).**—Not only the Paris market gardeners, but the people of France use instead of waste their house slops, and produce the finest Pears in the world by its judicious application to the trees. Sulphate of iron prevents the loss of ammonia, and reduces the offensiveness of sewage to a minimum. About 1 lb. of the sulphate may be used to 10 gallons of sewage, and before use it should be diluted with not less than six times as much water as the disinfected sewage—say, 10 gallons to 70 gallons, at which it can be used for almost all kinds of vegetables and fruit trees; but it is frequently diluted to 100 gallons.

**Red Spider on Gooseberry Bushes (Tyne).**—We do not perceive that a solution of softsoap would take up more time than mixing Paris green in water and keeping it mixed. We do not advise the use of Paris green for this purpose. A solution of softsoap with a handful of sulphur stirred into three or four gallons is both safer and more effectual. One grower of Gooseberries finds clear lime water the cheapest preparation for destroying red spider. Lime should be used in fresh lumps. Pour water on them, stir well, then allow the water to get clear. If a film of lime settle at the bottom of the tub the lime water will be as strong as it can be made; if there is no sediment the lime water may not be strong enough.

**Chestnut Tree Partly Dying (J. H. J.).**—In the absence of other data than those you give we are unable to account for the tree dying on one side while the other is sound. If it arose from what you name the whole tree would be affected instead of half. The injury may have been caused by the burrowing of some larvæ in that part, so as to prevent the flowing of the sap, or be infected with some fungus which has gained access by a wound. We having seen some Elms lately that had several limbs destroyed by a Polyporus that has been admitted by

broken branches several feet above where the fruits of the fungus appeared, its mycelium having caused the death of the affected branches, the other parts being quite healthy. Possibly the side of the tree that is dying may have been struck by lightning, which would be easily determined by an experienced observer of Nature.

**Peat Moss Manure from a Poultry House (E. G.).**—1, The moss itself contains 1 per cent. more nitrogen than straw, and that from a fowl house only changed every three months will be more valuable than stable manure freed of the strawy portions. 2, It is best applied as a top-dressing, lightly pointed in, before cropping, if left on the surface greater part of its fertilising properties may be lost; a good spadeful is sufficient for a square yard, or a good handful to a yard of Potato row or Pea drill. 3, It is excellent for Roses and all flowering plants, applying a large handful in a circle 1 foot from the stem all round, and pointing it in very lightly with a fork. About a quart may be added to each half-bushel of soil used for potting soft-wooded plants, crumbling it to powder and mixing thoroughly.

**Peach Trees rather Gross (Inquirer).**—As your soil is sandy it would be desirable to mix one-fourth of clay marl with it, dried and pounded. This could only be done by lifting the trees, which you practise yearly, and firm the soil well—excellent practice, but not sufficient to check the tendency to luxuriance. The addition of marl or clay would give more substance to the wood and render less liquid feeding needful, as the soil would have more retentive power, as well as containing more mineral substances, to enhance the solidity and quality of the fruit. The manure—three parts bone meal, one part sulphate of potash, and one part sulphate of lime, is good for Peach trees, but it will not alter the character of your soil, which is too light and siliceous, and requires more body, with potash and lime. Those you will get in the clay marl, the best for stone fruits.

**Perpetual Carnation Cuttings Failing (H. L.).**—The best cuttings are about 3 inches long, detached with a heel, cut transversely or pared smooth, the lower pair of leaves being removed. The compost should consist of turfy loam, leaf soil, and sand in equal parts (mixed), and just moist, not wet. Insert each cutting in a thumb pot, using a little sand; press firmly, and plunge the pots two-thirds their depth in cocoa-fibre refuse in a frame kept close, and with a bottom heat of about 65° to 70°. In four days if bright, or a week if dull, the cuttings may be watered, giving enough to moisten the whole of the soil, leaving the lights off until the tops of the cuttings become quite dry, then replace the lights. Continue this procedure until the cuttings are rooted, then gradually inure them to the air of the house, and harden and shift into larger pots. The frequent dewing or sprinklings were the cause of the cuttings failing, as such practice is fatal to them.

**Potato Sets Required to Plant an Acre of Ground—Supply for a Family (S. L. A.).**—About 10 cwt. of average sets are required to plant an acre at ordinary distances—say, 27 inches from row to row and 15 inches in the rows, or 30 inches between the rows and 18 inches apart from set to set for strong growers; the quantities being about the same, as the sets of the latter are a little larger than those of medium growers. It is a mistake to plant small trashy tubers. The quantity of land for the supply of a family depends upon the culture, season, and produce, also the quantity of Potatoes consumed; hence your question is difficult to answer. We have known a family of twelve well supplied with the produce of half an acre, and another far from satisfied with the produce of an acre of ground. There is also a difference in families, some are for the most part juveniles, others mainly adults, and there is a great difference in the views of economy in the cooking, to say nothing of waste in different sorts of Potatoes, so that nothing more than an approximate estimate can be given—namely, one acre.

**Carrots Grubby (N. S. R.).**—The best plan would be to sow the ground intended for Carrots with Mustard now and allow it to grow to the flowering stage and then dig it in. If this were done so as to allow of Early Carrot seed being sown early in July you would have good Carrots for winter of a useful size, or the seed might be sown after early Potatoes, and the Carrots would escape the fly that is the cause probably of those being riddled with worms. The Mustard has been found efficient against wireworm, a frequent alleged affliction, but very seldom occurring in old gardens. Change of site, trenching, and stirring the ground in winter are good preparatory processes for Carrots. No kind of manure produces "a worm that destroys Carrots, Onions, &c.," but the frequent and excessive use of organic manures favour growth in the plants, which the parents of the "worms" like for their progeny. There can be no harm in using the remedy for wireworm—kainit. It may be applied now as a top-dressing, 1½ lb. being a sufficient dressing for the size of bed named. It may be had of any manure dealer.

**Bees and Fruit Blossom (St. Julien).**—Many growers of fruit keep bees in their orchards and gardens, both for their usefulness in the transference of pollen and for gathering and storing honey. You appear to be one of several who have been deterred from keeping bees because of their treatment as described by so-called advanced apiarists "appearing so intricate." Plain sound teaching is given in this Journal, and intricate methods of a deterrent character eschewed. You ask what a "Hallamshire Bee-keeper" has to say on the subject. He says, "Keep Punic bees in straw hives 30 inches deep by 12 inches in diameter, let them alone, and they will manage themselves." Bees in glass structures very often perish in trying to get out. Sweeping the extended blossoms lightly when dry with a plume of Pampas Grass, a



bunch of soft feathers, or a rabbit's tail (see Mr. Mowbray's remarks on page 251) suffices for pollen distribution. "A. H. B. K." also says as Punic bees have been in this country seven years persons who have had actual experience with them might say what they can against them. We are unable at present to publish a reply to your other question, but the matter is not urgent.

**Marechal Niel Rose under Glass (S. S.).**—For a week or more before the stems are cut down both the soil and atmosphere should be kept rather dry, also for a few days afterwards; then well syringe the Roses and house, and maintain a genial atmosphere, also afford adequate but not excessive moisture for the roots. As the growth extends the water supply must be increased, also the ventilation. The roof lights should not be removed at the end of May. Your removal of them led to the failure last year. Some of the best results in growing the Rose under glass are obtained under fixed sashes. The growths should reach the top of the house, and the wood and leaves become firm before the lights are removed—say in August. The growths must be kept clean. We have not before heard of the practice you suggest, and we are not in the least surprised that it did not prove satisfactory. Ten times more Marechal Niel Roses are grown under fixed roofs of glass than in structures from which the sashes are removed in late summer. If you cannot succeed without removing the lights by all means remove them, but not before the growths are strong and firm about harvest time.

**Names of Fruits.**—*Notice.*—Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (J. F. D.).—The large Apple is Hoary Morning, the small one Coo's Golden Drop. (B. D. K.).—Name not recognised, probably local.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (A. H.).—The fruiting form of the Hornbeam, Carpinus Betulus. The Apples shall be examined.

COVENT GARDEN MARKET.—MARCH 29TH.

SUPPLIES coming shorter, with exception of Cucumbers, which are coming heavy. Business generally quiet.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, half sieve .. ..	1	0	to	3	Lemons, case .. ..	10	0	to	15
" Nova Scotia, per					Oranges, per 100 .. ..	4	0		9
barrel .. ..	12	0		17	St. Michael Pines, each ..	3	0		6
Grapes, per lb. .. ..	1	6		4	Strawberries, per lb. ..	8	0		12

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Kidney, per lb. ..	0	6	to	1	Mustard and Cress, punnet	0	2	to	0
Bect, Red, dozen .. ..	1	0		0	Onions, bunch .. ..	0	3		0
Carrots, bunch .. ..	0	4		0	Parsley, dozen bunches ..	2	0		3
Caniflowers, dozen .. ..	2	0		3	Parsnips, dozen .. ..	1	0		0
Celery, bundle .. ..	1	0		1	Potatoes, per cwt. .. ..	2	0		5
Coleworts, dozen bunches	2	0		4	Salsafy, bundle .. ..	1	0		1
Cucumbers, dozen .. ..	5	0		7	Scorzonera, bundle .. ..	1	6		0
Endive, dozen .. ..	1	3		1	Seakale, per basket .. ..	1	3		1
Herbs, bunch .. ..	0	3		0	Shallots, per lb. .. ..	0	3		0
Leeks, bunch .. ..	0	2		0	Spinach, bushel .. ..	3	0		3
Lettuce, dozen .. ..	0	9		1	Tomatoes, per lb. .. ..	0	6		1
Mushrooms, punnet .. ..	0	9		1	Turnips, bunch .. ..	0	3		0

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Anemones (French), dozen	2	0	to	6	Mignonette, 12 bunches ..	3	0	to	6
Arum Lilies, 12 blooms ..	1	6		3	Mimosa, French, per bunch	1	0		1
Azalea, dozen sprays .. ..	0	6		1	Narciss, var., French, dozen	3	0		6
Bouvardias, bunch .. ..	0	6		1	bunches .. ..	3	0		6
Camellias, doz. blooms ..	1	0		3	Orchids, per dozen blooms	3	0		12
Carnations, 12 blooms ..	2	0		4	Pelargoniums, 12 bunches	8	0		12
Chrysanthemums, dozen	4	0		9	Pelargoniums, scarlet, doz.	5	0		8
bunches .. ..	4	0		9	bunches .. ..	1	0		3
Daffodils, double, dozen	3	0		9	Primroses, dozen bunches	1	0		3
bunches .. ..	3	0		9	Primula (double) 12 sprays	0	9		1
Daffodils, single, dozen	4	0		12	Roses (French), per doz. ..	2	0		6
bunches .. ..	4	0		12	" boxes, 100. .. ..	5	0		8
Eucharis, dozen .. ..	3	0		6	" (indoor), dozen .. ..	2	0		4
Gardenias, per dozen .. ..	6	0		12	" Red, per doz. blooms ..	3	0		9
Hyacinth, Roman, 12 sprays	0	6		1	" Tea, white, dozen .. ..	1	6		3
Lilac, white, French, per	3	0		5	" Yellow, dozen .. ..	4	0		6
bunch .. ..	3	0		5	Snowdrops, dozen bunches	1	0		2
Lilium longiflorum 12	6	0		9	Tuberose, 12 blooms .. ..	1	0		1
blooms .. ..	6	0		9	Tulips, dozen blooms .. ..	0	6		1
Lily of the Valley, dozen	0	6		1	Violets, Parme, French, per	2	0		3
sprays .. ..	0	6		1	bunch .. ..	2	0		3
Maidenhair Fern, dozen	6	0		9	Violets, Ozar, French, per	1	6		2
bunches .. ..	6	0		9	bunch .. ..	1	6		2
Marguerites, 12 bunches ..	3	0		6	Violets, Victoria, French,	1	6		2
					dozen bunches .. ..	1	6		2

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to	12	Foliage plants, var., each ..	2	0	to	10
Aspidistra, per dozen ..	18	0		36	Genista, per dozen .. ..	9	0		15
Aspidistra, specimen plant	5	0		10	Hyacinths, dozen pots ..	8	0		12
Azalea, per dozen .. ..	24	0		42	Lily of the Valley, dozen	12	0		18
Cineraria, per dozen ..	8	0		12	pots .. ..	12	0		18
Cupressus, large plants, each	2	0		5	Lycopodiums, per dozen ..	3	0		4
Cyclamen, dozen pots ..	9	0		18	Marguerite Daisy, dozen ..	6	0		12
Dracena terminalis, dozen	18	0		42	Myrtles, dozen .. ..	6	0		9
" viridis, dozen .. ..	9	0		24	Palms, in var., each .. ..	1	0		15
Euonymus, var., dozen ..	6	0		18	" (specimens) .. ..	21	0		63
Evergreens, in var., dozen	6	0		24	Primula, single, doz. pots	4	0		6
Ferns, in variety, dozen ..	4	0		18	Solanums per dozen .. ..	9	0		12
Ferns (small) per hundred	6	0		8	Tulips, dozen pots .. ..	6	0		9
Ficus elastica, each .. ..	1	6		7					



"FARMING."

QUITE delightful reading was the statement by "A Farmer's Wife" (page 211) of how one man takes up milk, Celery, and Potatoes, while others turn to Barley, horse breeding, and fruit growing—anything for which land, situation, or both appear suitable. Long have we striven to enforce the wisdom and safety of such common-sense practice, from a conviction that only by a wise modification of old routine, by the curtailment of one crop, the enlargement of another, the introduction of new crops, and a general but cautious change to meet the requirements of the times, can farmers grapple with and overcome their difficulties. All honour to such men! Nothing but praise do they deserve. Not to them do we refer when we point to those who persist in erroneous practices to their own serious loss, and yet who loudly complain of hard times, and pester the landlord or agent with periodical demands of rent reduction.

It is precisely because we are constantly meeting with such glaring examples of mismanagement that we are so outspoken. For example, our last week end was spent at a secluded Midland farmhouse. On this farm we have induced the tenant to make a snug lambing fold for the last two years, and he quite realises its full value. Walking over a neighbouring farm, we came upon some weakly twin lambs just born out upon a bleak pasture, across which swept a keen north-eastern blast, whose icy breath would make short work of them. No provision of shelter of any sort except the hedgerows was there, neither shepherd or farmer was visible, chance and luck evidently held sway upon that farm, and we were not surprised to come upon (in another meadow) about as wretched a lot of yearling cattle as we have ever met with. As we drove to the railway station next day we saw a considerable number of cattle and horses out upon very bare pasture, which they were nibbling just like so many mice. Prominent ribs and staring coats told the tale of hunger and deprivation all too plainly. Yet in that meadow there was a stack of hay uncut and enclosed by a stout barrier of bushes. Entirely did we agree with the outspoken opinion of our driver, that such brutes as the owner of the herd ought to be punished for cruelty to animals. They are punished indirectly by losses resultant from their mistaken economy. It is their cattle that so frequently realise less than was given for them twelve months ago. The whole thing is ridiculous and contemptible, and is altogether a matter apart from anything like "farming."

"A Farmer's Wife" must pardon us, but we cannot allow her dictum to pass unchallenged when she asserts that "animals do not like, and will not have silage." Clearly there are no prominent ribs, or staring coats of animals out of condition on that farm. So high fed are the whole of them that they will not eat



wholesome nutritious food for which less favoured animals positively fight. We have had both stockmen and shepherds who vowed that neither sheep nor cattle would eat silage, and if they did, it did them more harm than good. Such men had quickly to alter their views or be sent to the right about. To the lady it will suffice, we feel assured, if we venture to point out that the economical feeding of farm live stock has become a science, under whose beneficent guidance exact knowledge is acquired how to feed so as to obtain the best results at the lowest cost, a very different thing from the costly extremes of wasteful extravagance or equally wasteful parsimony.

In the matter of the comparative cost of ensilage, which we may explain indicates the process of making silage, and of hay-making, our fair critic has also been misled. Ensilage as now practised consists of mowing, carting, stacking, and pressing. There is no cutting up of the green fodder now that stacks have taken the place of silos. The process is simplicity itself, is much less expensive, and has none of the uncertainty of hay-making. In expense haymaking only bears anything approaching favourable comparison when the barometer is at set fair, and cloudless skies prevail day after day. In such weather hay-making is a delightful process. With grass mowed on one day, dried and stacked on the next, we pay very little heed to ensilage, and the hay made is of the highest quality provided the grass is mown at the right stage of growth. But, then, how seldom do we have such perfect summer weather? Certainly not during the last three or four years, and in unsettled weather not only does the cost mount up, but quality declines, sometimes so much that the hay is little better than litter.

We agree entirely with "A Farmer's Wife" that there are farmers and farmers. We live much among them, and it is precisely because we see so much that is wrong that we endeavour to point to better things. To the men of "new departures" we say heartily, Well done. To our critic we say, So entirely do we agree that there are two sides to every question, that I have endeavoured to show cause once more for the side which practice and reason prove to be the right one.

#### WORK ON THE HOME FARM.

The dry weather has been much in favour of late lambs, many of which came very weakly indeed, so that where they are out on bleak pastures many of them have but a brief existence, despite the absence of wet. Lambing is timed for the present month in the Midlands, and though it is so late in the season, flockmasters are well repaid for the provision of lambing folds, for March weather is proverbially fickle. Keep young calves confined to the hovels yet awhile, hoose is rampant among those which are let out in the open; in one instance we have found them suffering badly from this troublesome disease when kept in. This was owing to the filthy condition of the floor. The tenant has no arable land. Wheat straw now costs in that particular locality £4 per ton, he cannot afford to pay such a price, and the calves have to lie down upon a damp filthy floor. This is one of many an instance affording proof of the necessity which exists on dairy farms for just a few acres of arable land for the cultivation of a straw crop as well as some extra green crops. There is then a supply of home-grown corn as well as of straw either for food or fodder.

Home farmers should be on the alert to obtain bracken, sedges, or rushes for litter when either can be had. Mention is made of this because we recently saw a large quantity of bracken decaying in a wood near a home farm where straw was in use for litter. We know there are difficulties with gamekeepers about the cutting and collection of bracken, but these may generally be overcome by the exercise of a little tact and discretion.

Much of the Barley has been sown under favourable conditions on autumn-tilled land. Oats, too, have been sown so far as was possible, but we have a considerable breadth yet to sow after late folds. We pay little, if any, heed to popular ideas about what is termed Oat soil. For this crop it is more a question of manure than anything else—store the soil with fertility, procure good seed, and sow without minding about geological formation or other niceties of distinction. We have had Oat crops alike good in poor, thin, silicious soil and in very heavy land; on the thin soil it was possible to see outside the headlands where the manure had fallen short, straw with a tiny cluster of grains not more than 6 inches high, and out in the field the bulk of the crop 6 feet high. It is for this reason we say that no crop answers better, few so well, for plenty of manure as Oats.

## PRUDENCE IN EDUCATION: RURAL PROSPERITY.

PRUDENCE should be the motto of School Boards, of County Councils, of District Councils, and of Village Councils. Education should be to each individual only the means to the end. Education leading up to, and enabling the worker, be he farmer, market gardener, florist, or any other trade or employment, to digest technical knowledge as acquired through books and periodicals; as teaching and discussing his individual interests is real primary education.

Our leading statesmen have told us, and are continually telling us, that to bring the people back to the country we must provide the villagers with amusements for their evenings. So I suppose the piano and the secular choir, with all other harmless amusements, must be fostered. But the land agent will discover that imprudence will lead to extravagant ideas even in these small things, and "prudence" ought to be kept continually before the young people, be they of the family of the land agent, the farmer, the cottager, or the village tradesman.

We may be sure the hunting establishments will go on as long as it suits the farmer, and no longer. There is nothing to force the tenant farmer to join the hunt, or to keep a horse specially for his own riding to hounds, unless "prudence" tells him it suits his book in the long run. He may be one of the yeomanry, and he may find it to his advantage to breed a few horses of the lighter class. Look everywhere round, the inmates of our farmhouses, and for matter of that land agents, and most of the people who get anything of income or no income from the land, are less simple in their habits than their predecessors were. The easy communication with places away from home has partly caused the great change.

The light farmer's gig has replaced the rougher cart that helped to bring in the wife or daughter with the small produce of the homestead. Often the good old farmhouse with its ample dairy has had to give way to some ugly form of villa farmhouse, with parlour for the young ladies' piano, and so on.

If the mansion is let then let the owner reside in the neighbourhood. Land agents do not take the place of the landlord. I think Lord Winchelsea would abolish the land agent if possible. Very, very, difficult is the position we all know, yet something will have to be done, though it may be with as little unnecessary interference as can be devised. The land has its duties, and there should be a larger proportion of the income derived from land expended on the estate and in the neighbourhood than is now often the case. A hundred years ago things were very different as to expenditure of the income from landed estates.

Lastly, "prudence" tells us that no amount of education will ever supply the place of *practice*. Experience, with education by books and periodicals for assistants, is the only way to arrive at rural prosperity.—COTSWOLD.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1893. March.	Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. 19	30.483	37.2	31.3	N.	40.6	46.7	25.9	79.0	19.9	—
Monday .. 20	30.476	35.4	33.4	W.	39.4	51.8	28.1	78.1	22.2	—
Tuesday .. 21	30.419	36.9	33.0	N.E.	39.1	53.0	27.8	69.2	23.1	—
Wednesday 22	30.344	39.9	39.9	N.E.	38.9	56.0	32.9	87.1	24.1	—
Thursday .. 23	30.310	38.1	38.0	N.E.	40.0	61.2	34.8	88.4	30.9	—
Friday .. 24	30.391	46.6	42.2	N.E.	39.9	62.0	33.9	91.3	26.1	—
Saturday .. 25	30.470	46.5	42.9	N.E.	40.3	63.3	33.1	97.4	24.7	—
	30.413	40.1	37.2		39.7	56.3	30.9	84.4	24.4	—

#### REMARKS.

- 19th.—Cold, with unbroken sunshine, but slight fog after 3.30 P.M.  
 20th.—Bright sunshine throughout, sharp frost early, but much warmer in afternoon.  
 21st.—Sharp frost early, sun visible through fog all morning, shining brightly in afternoon, slightly foggy in evening.  
 22nd.—Slight, but very wet, fog early, bright sunshine from 11.30 A.M.  
 23rd.—More or less fog all the morning, bright sunshine after 1 P.M.  
 24th.—Bright sunshine throughout.  
 25th.—Unbroken sunshine.

A fine spring week with considerable range of temperature and some sharp frosts.—G. J. SYMONS.





### PRACTICAL HINTS ON MELON CULTURE.

TO the majority of those who have been engaged in the growth of Melons on an extensive scale this subject presents peculiar attractions, doubtless because they see in the rapid growth and handsome fruits a speedy return for the labour bestowed upon them. True, there are some who watch with intense interest and evident satisfaction the lingering growth of plants whose annual increase in size is of the most meagre description, but to the average man those forms of vegetation which create astonishment by the quickness of their growth give also the most gratifying results. To those who watch and tend them as their growth proceeds this pleasure is still further intensified, for it gives to the cultivator that inward satisfaction which causes him to regard as nought the labours which bring a reward so abundant and so good.

The time occupied in producing Melons from the sowing of the seed till the fruits are ready to cut varies considerably according to the seasons at which the sowings are made. The plants from seed sown the first week in January with good culture will afford ripe fruits sixteen weeks after. From sowings made in March two weeks less are required to reach a similar stage. During the summer months I have on several occasions cut large handsome fruits from plants raised from seed sown only twelve weeks previously; but to do this every advantage must be taken to secure high temperatures throughout the day by closing early and using the syringe freely.

Each seed ought to be sown in a separate pot, as the plants then grow sturdily from the first, and the risk of their receiving a check at an early stage of growth is thus avoided. If 3-inch pots are used, the only drainage necessary is a piece of crock placed over the bottom, and covered with a lump of turfy soil or moss; to either of these materials the roots quickly cling, and form good balls for placing into 6-inch pots, or for planting into the permanent beds. Care ought to be exercised in selecting the soil employed for sowing Melon seeds in, for I am firmly convinced that numbers of plants get into a stunted state in the earliest stages of their growth in consequence of the presence of minute insects in the soil. This undesirable state of affairs may easily be prevented if the compost is burned or thoroughly dried over a boiler at work before being used. Good loam, with a third of leaf soil added, is, I consider, the best for the purpose. Many employ loam without any additional material, but I find the roots work much more freely when leaf soil is added—this is an important consideration at that early stage. Press the soil moderately firm, and just cover the seed with it.

With the early sowing there is often a difficulty in providing a good position for the young plants until they are large enough to plant in their final positions. Bottom heat is of great advantage, and yet the plants ought also to be kept near the glass. These two conditions are not generally found in conjunction with each other, unless special means are taken to secure them. It is easy enough to find a suitable place for the pots containing the seeds where they will receive bottom heat, by placing them on the hot-water pipes or plunging them in propagating frames; but in either of these positions the seedlings are too far from the glass by the time the first pair of leaves are formed, consequently the stems become drawn at the outset; on the other hand, if at this stage they are taken from the bottom heat and placed on a shelf a check is

received, and but slow progress is made. This difficulty may be overcome to a certain extent by standing the pots on a board raised above the pipes at the front of a well heated house or pit; but when this course is adopted great care must be exercised to keep red spider at bay. The best of all plans is to make up a hotbed at one end of a house or pit, so that the young plants can be kept within a foot or 18 inches of the glass, and at the same time receive good bottom heat; sturdy yet quick growth is then obtained. When such a position is afforded them it is a good plan to shift the plants into 5 or 6-inch pots, and grow them there till the roots have reached the sides of the pot, when they are ready for setting in the beds.

I do not like the plan of using fermenting materials in Melon beds which are well supplied with pipes for affording bottom heat, because a strong heat is usually obtained to start with, and just at the time the plants require it most (when swelling their fruits) it is fast declining. This alone is a strong objection; others are the constant watching required to keep shoots from being cut with the tying material, as the bed sinks, and the great trouble experienced with woodlice whenever this practice is adopted. Unfortunately, however, the bottom heat pipes are frequently placed too low, so that it is absolutely necessary to devise some means of raising the plants considerably above them. Some recommend using large pieces of wood or clinkers, but if a layer of these a foot or more in thickness has to be employed very little heat reaches the soil in which the plants are growing. I find the best plan under the circumstances is to place a row of bricks on each side, add other layers until the required height is reached. Then lay cross pieces of boards, rough wood, or slate slabs, to form the foundation of the bed, and over this place another layer of birch, straw, or clinkers to prevent the soil from passing between the interstices when wood is used, or from becoming sodden when slate slabs are employed. If this plan is followed a chamber of heated air will be formed beneath the bed, which will maintain the soil at a more uniform temperature than it can be kept at if either of the previously mentioned methods are adopted. If a space from 9 inches to a foot in depth is left for the soil, ample root room will be afforded.

The distance apart at which the plants should be set ought to be determined by the length of rafter allowed for top growth. In many instances only a portion of the roof is available for covering with Melon shoots, on account of the upper parts of it being fitted with shelves devoted to the growth of plants in pots, which leaves only about 4 or 5 feet run of rafter for the Melon shoots. When such is the case 3 feet apart is about the right distance for the plants; but where another foot or two of roof space is at command the plants will succeed admirably if set from 6 inches to a foot nearer to each other.

In preparing the soil for Melons one often has a great variety of materials to deal with, for it is seldom that the ideal Melon soil can be obtained. A good turfy yellow loam, rather adhesive in texture, is generally regarded as the most suitable, and I doubt not that such a soil will with but little preparation produce fine Melons, but when this commodity is scarce I think it may with advantage be reserved for other purposes where soils more easily obtained may be rendered capable of producing equally good Melons, with a little extra attention in the way of preparation. Stiff loams without a particle of fibre will grow grand crops of Melons; so will garden soil of a heavy nature. The former should be stacked in a heap with layers of fresh horse droppings sprinkled with salt placed between layers of soil, these being a foot in thickness and the manure 3 inches. If this remains in the heap for twelve months it will require no other addition than one load of lime rubble to six of soil, with a little soot added. The garden soil if rich should have the same quantity of lime rubble and soot, and half a load of wood ashes; but if manure has not been recently added to it, one load of fresh horse droppings



to four of soil in addition to the other ingredients, will prove advantageous. Good turfy loam, such as that described in the first instance, will only need the addition of a sixth of manure and a sprinkling of soot. Whatever soil is employed should be placed in mounds on the bed twenty-four hours before planting is done, to enable every part of it to become thoroughly warm. Other remarks on the subject I must defer till another issue.—LABOR OMNIA VINCIT.

### CHASSELAS NAPOLEON GRAPE.

NOTICING the remarks about this *old* "new Grape" on page 249 of the *Journal of Horticulture*, I was induced to turn up and read the article I had missed on page 229, in which I find the history of the Grape is, I believe, correctly traced, so far, at least, as it is known and recorded in pomological works. It is somewhat curious, however, that in no British treatise on the Vine, not even the most recent and best (Mr. Barron's), nor in such a standard pomological work as Dr. Hogg's *Fruit Manual*, is the name "Chasselas Napoleon" mentioned, although the Grape has been fairly well known among Grape growers in this country by that name for fully thirty years, as stated in your articles. It came first under my notice in the year 1858 at Trentham, where it was then well grown under the name of "Chasselas Napoleon," and during that and several years following it was exhibited in collections of fruit by both Messrs. George Fleming and Archibald Henderson. Two Vines of it were grown—one in the Muscat houses and the other in a "Trentham Case" house. No artificial means were taken to "set" the berries; but they did set and swell as freely as the Muscats—of many names, if only one or two kinds—without the least extra attention. It may be stated that in the same Muscat house, and near to the Chasselas Napoleon, a Vine of Cannon Hall Muscat set its fruit admirably, and for several years produced splendid well-filled bunches, one of which exhibited at London by Mr. Fleming is still, I believe, the "record" bunch of that grand variety when "well grown," which unfortunately is seldom. At the same time and place Black Morocco set badly, although every means was tried, including artificial impregnation, to get it to behave better.

Referring to a list of the Vines grown at Trentham made by myself in the spring of 1859, I find the name of some Grapes which have since acquired much popularity, while others have almost or wholly disappeared. Among the former Alicante, Gros Colman, and Gros Maroc are prominent Grapes, while Caillaba, Chaptal, a good Chasselas type of Grape, Chasselas Rouge, Chasselas Noir, Chasselas Musque, Chasselas Vibert, Gros Romain, Gromier du Cantal (an immense bunch generally on strong Vines, with a good sized, showy, flame-coloured berry, of a refreshing, sweet, Muscadine flavour); Muscat de Juillet, Muscat de Saumur, Muscat St. Laurent, Muscat Ottonel, Sarbelle, and others of the small round Muscats, or more properly Frontignans, are now scarcely ever met with in private gardens, or seen at fruit exhibitions, although some of them, when well grown, possess excellent qualities for home supply and public competition.

Beside those mentioned, many other varieties of Grapes, including, of course, all the best Hamburgs and Muscats, were then grown at Trentham; Mr. Fleming being a keen collector, as well as a very successful grower and exhibitor of Grapes and other fruits. Many of the rarer varieties he had received in the "fifties" direct from the Continent, and others were supplied to him by Mr. Thomas Rivers of Sawbridgeworth, including, it is believed, the well-known Trentham Black, another really good Grape when well grown.

All the Grapes mentioned were in a bearing state at Trentham in 1859, and more or less "established," so that their merits and characteristics could be fairly seen and noted. Some have greatly exceeded expectations, notably Gros Colman, while others have fallen considerably short, and I regret to say "Chasselas Napoleon" must be included in the disappointing ones. I have a vivid recollection of its fine appearance at Trentham, and also in Worcestershire, in the first half of the "sixties," on a rich marly loam on which all kinds of fruit did well; but on a different soil, and with much better appliances, I have, after repeated trials, failed to grow it better than "indifferently passable." Hence, I have discarded it to make room for more useful Grapes, and from a tolerably wide knowledge I am inclined to think that my experience is that of most men who have tried their best to grow "Chasselas Napoleon" under the varying circumstances of different places.

This Grape occasionally appears still at exhibitions, showing how well it does in places where the natural elements suit it and good treatment is applied. It has been seen in fine condition at the Edinburgh Shows in recent years, I believe exhibited by

Mr. Ramsay, Fordell Gardens, Fife. It possibly may be grown at Trentham still, or in some of the numerous vineries in the West Midlands, which followed the Trentham example thirty years ago. The marvel is how experienced and business men have got so "mixed" over a simple affair; but as the name "Chasselas Napoleon" has apparently been overlooked to this period in our recognised standards they may be allowed the small excuse. In the "Fruit Manual," 5th edition, 1884, Dr. Hogg describes Panse Jaune in terms that might apply to Chasselas Napoleon, although not quite in accordance with my knowledge and experience of the latter Grape. The only synonym given is Grosse Panse, while under the Grape Bican he says:—"The Panse Jaune is frequently and erroneously called Bican on the Continent." Mr. Barron, in his "Vines and Vine Culture," says much the same under "Bican," giving Panse Jaune and Bican as synonyms of that variety, and adding that "the Panse Jaune is a large, coarse Grape, and is frequently called Bican on the Continent." Chasselas Napoleon and Bican in several exhibits at the Grape Show at the International Exhibition, Paris, October, 1889, were similar so far as the eye could judge. A large yellow-berried Grape exhibited at the same time under the name of Panse Jaune was not like the Chasselas Napoleon known to—AN OLD TRENTHAM MAN.

### THE WAYS OF DAFFODILS.

LAST year I kept a few potfuls of slowly forced plants for seed, and as the seed was not ready to gather until summer, by which time the leaves had died down, the bulbs were left in the pots, the latter being placed in a corner out of the way. About mid-winter I noticed signs of growth, and I had the pots with their contents placed in a warm house, at the same time giving a surfacing of light soil and manure. In due time flowers were produced, not so large as from imported bulbs, but certainly earlier than the latter could have been had. The sorts were Ornatus, Emperor, and Horsefieldi. The former was in 7-inch pots, and had some seventeen or eighteen flowers. Emperor was originally three large bulbs in 5-inch pots, and these produced six blooms, while Horsefieldi in 5-inch pots yielded ten flowers. To me the above was new in Daffodil culture.

I began cutting Sir Watkin out of doors on March 20th, a few days later than Ajax minor and earlier than Obvallaris. At the same time we have Sir Watkin with the flower stems 6 inches in height, and others just peeping through the ground. The earlier batch was forced last year, very early; some plants have been in the same position for three years, and the bulbs of latest were planted in November last. In the same way I have Ornatus at the present moment on the point of opening, along with others in various stages of growth; so also Horsefieldi and others. This, I think, is a most valuable feature in Daffodils. There is no plant that can be forced and suffer less. However, I invariably feed the forced plants right up to the time of the flowers opening. This is important; small pots, and high feeding. By the end of March early forced plants may be planted out, and if fairly well treated, may be again forced in two years thereafter.

In our borders are a few illustrations of the benefit of transplanting bulbs before they become crowded. There we have clumps of the same kinds, some with only two or three flowers showing, others with flowers from every strong growth. The difference arises solely from the latter having been transplanted, while the former had been overlooked.—N. B.



### ORCHIDS AND ORCHID CULTURE.

WHEN it is stated that in a collection of Orchids of but very moderate dimensions there are representatives from the vast Continent of India, Burmah, Java, Borneo, New Guinea, Northern Australia, China, Japan, Madagascar, and other African islands, as well as the mainland, that Brazil, New Grenada, Guatemala, Peru, and Mexico are each supplying us with immense stores of their individual forms, it would, said Mr. W. Swan of Bystock Gardens, in a paper read recently before the Devon and Exeter Gardeners' Association, surely be unwise to prescribe a hard and fast line as to the methods of culture to be pursued, and expect in all cases certain and satisfactory results to be obtained. It is by no means absolutely necessary that houses should be at first specially erected,



as many kinds will grow and flower freely in an ordinary plant stove ; but if once the culture is commenced with a desire and purpose continually to add to the collection, then it is much better that houses be set apart for the different classes, and so built that the needs of the various species are taken into due consideration.

Doubtless all were aware of the advantages of span-roof houses for most flowering plants, but it is not essential that all structures devoted to Orchid culture should be of this description. Half-span houses facing the south or south-west are capital structures for Cattleyas, Lælias, Dendrobiums, Aerides, and Vandas, while one of a similar form facing the north is very desirable for *Odontoglossums* and *Masdevallias*. This latter structure is much more necessary in the southern parts of the country than in the north, for if *Odontoglossums* are so situated that the greater portion of the summer sunshine falls on the glass roof the probability is that the atmosphere (though the house may be shaded with canvas blinds) will be much drier than is desirable for the well-being of the plants ; and only by constantly damping the floor, entailing a considerable amount of labour and time, can an approach to a regular humidity in the state of the atmosphere be maintained. But a house facing north receives less of the sun's rays, and correspondingly a lower state of the temperature prevails.

The ventilation, too, would not need to be so excessive, which is often excessively draughty, and so when a good damping down is given morning and evening the air retains a sufficiency of moisture without any great variableness. It is very doubtful, too, if side lights are any advantage to Orchid houses, inasmuch as in summer, when the sun shines fiercely upon them, the state of the atmosphere about the plants is much too dry. To prevent this many fasten tiffany or paint summer cloud on the glass ; and, again, in the winter the cold is so liable to catch the side that thick canvas or mats are fastened round to prevent the sudden and rapid lowering of the temperature.

If, then, instead of glass, brickwork were carried up to the gutters the houses would be cooler and moister in the summer, and in the winter drier and warmer. Again, do not allow cement to be spread on the inside walls of any Orchid house ; this covering is of such a hard, dry nature that, holding no moisture, it cannot part with any. And in the winter the heated air from the pipes creeping up or along these surfaces soon become even more dry and hurtful. Simple brickwork, well whitewashed, will retain moisture, and be of considerable service in maintaining the uniformity of the atmospheric conditions.

The tanks for holding rain water should be outside, well bricked over, with a communication to a small dipping place inside ; or, if the tanks should be built inside, they too, with the exception of a small place for dipping, should be covered, so that the whole of the surface under the stages would be simply soil, covered with ashes for appearance sake, or if clean fresh leaves can be obtained, a layer of these would be of considerable service. These surfaces during the spring and summer should often have a watering with liquid manure, and if a little guano and soot water can be obtained by all means use it.

Open tanks in the houses are a great evil, more especially when, as is often the case, they run the whole length of the centre and side stages. An idea is held by some that with such tanks evaporation will constantly be taking place, and a sufficiency of moisture be present to compensate for that which is lost through ventilation and the hot-water pipes. That the pipes will cause the air to become dry I readily admit, but that cold water in open tanks will throw off enough moisture I emphatically deny, and those who construct under this delusion make a fatal mistake. If the water is warmed by having a hot-water pipe passing through it, at times when the pipes are very hot too much evaporation will take place, and if there is no pipe at all the cold water becomes a condensing rather than an evaporating medium. Cold water under such conditions is as impervious as marble, and when still and without motion gives, comparatively speaking, nothing ; but by abstracting the moisture already in the atmosphere the house becomes unduly arid, causes much harm, the plants suffer, while injurious insects increase at an alarming rate.

Houses specially erected, or those it is proposed to alter to the growing of Orchids, should have the side and centre stages built on the double shelf principle. By this I mean a lower shelf made so that the ashes or shingle may be spread on tiles or slates, and over this some 6 inches, another open lath stage on which to stand the plants. By keeping this lower shelf well watered much moisture is always present, and the open upper stage permits water rapidly to pass from the plants.

#### PHAIUS MACULATUS.

THIS handsome representative of a useful and popular genus is not quite so frequently met with as it might be. It has a double claim on our attention, as not only has it lovely flowers, but it is

one of the very few Orchids with variegated foliage, its dark green plicate leaves, which are nearly 2 feet in length, being freely spotted with yellow. The scapes spring from the base of the large ovate pseudo-bulbs, and are about 2 feet in height. These carry racemes of ten or twelve flowers rather closely arranged. The individual flowers are 2 or 3 inches across, of a soft yellow colour, except the middle lobe of the lip, which is heavily marked with reddish brown. *P. maculatus* is a native of Northern India and Japan, and was introduced in 1823.—A. B.

#### ODONTOGLOSSUM RUCKERIANUM SPLENDENS.

As will be seen by referring to the illustration (fig. 53), this variety is a decided improvement upon *O. Ruckerianum*, and when exhibited by Sir Trevor Lawrence, Bart., at the Drill Hall, on March 14th, the Orchid Committee of the Royal Horticultural Society adjudged it an award of merit. The sepals and petals are white with a faint rose tinge, and are densely spotted with



FIG. 53.—ODONTOGLOSSUM RUCKERIANUM SPLENDENS.

chocolate or reddish brown. The lip is pale yellow marked with a dark crimson blotch. The specimen exhibited bore an arching spike, on which there were fourteen fully developed flowers.

#### DENDROBIUM × BURFORDIENSE.

THERE is one invariable good quality that hybrids from *Dendrobium aureum* possess, and that is that the lip is comparatively spreading or reflexed, and consequently shows off to advantage. This is well seen in *D. × Ainsworthi*, *D. × Leechianum*, and *D. × splendidissimum*, all derived from *D. aureum* and *D. nobile*. The present hybrid was derived from *Linawianum* ♀ and *D. aureum* ♂, in the collection of Sir Trevor Lawrence, Bart., of Burford, Dorking, by Mr. W. H. White. It is a charming little thing, and may be compared to *D. × Dominicanum* (*D. nobile* ♀ × *D. Linawianum* ♂), except that the sepals and petals are more spreading and of a lighter shade, and the lip flatter, more reflexed, and with a smaller disc. The sepals and petals are pale blush, passing into light rose-pink near the apex, and the lip with a small maroon disc, a white zone round it, and a rose-pink tip. It is of free growth and very floriferous.—(*The Orchid Review*.)

#### NOTES FROM IRELAND.

WITH us March has been a month of uninterrupted sunshine, and Narcissi have opened very quickly. I fear that at the coming Spring Show of the Royal Horticultural Society in Dublin on April 20th they will be conspicuous by their absence. Last season they were a strong feature. The finest display of Narcissi in or near the Irish metropolis is at the College gardens, but coupled with the name of Burbidge, *cela va sans dire*. En route for these



happy hunting grounds some fine beds on Stephen's Green are very prominent; two large beds of Sir Watkin, about 500 to a bed, others of maximus, Emperor, and Horsefieldi, all true, supplied by a Dublin firm who need not blush at seeing their name on the labels.

At the College gardens they are now (March 29th) in full beauty, all a-growing, and how they do grow here! and all a-blowing, and how they do blow! Many of the inhabitants of the densely populated borders are also responding to the warmth. Very pretty are *Orobis vernus*, *Primula Harbinger*, and the unique dark College Garden Seedling; and very quaint is *Iris persica* on a low wall, with greenish white flowers. A mass of the small *doronicum* is intensely yellow. Nature is lavish with gold at this season. *Ranunculus montanus* peeps up with golden eyes from cushions of green, with gold below, and golden sunshine flooding everything; the *cœrulean* blue of *Ceanothus rigidus* clasping an old wall comes as a relief. But *Narcissi* is the menu to-day, and the *pièce de résistance* the long west border under a wall. Here the *chef* has large masses of Sir Watkin, Emperor, and Horsefieldi, great fat beauties with broad luxuriant foliage. Clumps of Sir Watkin and Horsefieldi are prominent in all parts of the gardens, and the isolated plants of the stately maximus, with its distinct and elegantly twisted foliage, are very fine. This maximus is peculiar to the gardens, not the ordinary type. In secluded parts are great gatherings of the clan *incomparabilis*, of which Sir Watkin is the chief.

One cannot pass without notice a huge scarlet *Rhododendron* in full flower, nor what was, to me, the most interesting plant seen to-day—viz., *Rhododendron Chamæcistus*, 2 inches high, bearing pale pink blossoms. Returning to *Narcissi*, the more delicate varieties are sheltered in a frame, *Triandrus*, *Corbularia*, and *Juncifolius*, some hung like tiny lamps on filaments of green, others with delicate ivory tubes. Quite unexpected we come on that *rara avis* Madame de Graafe; but Madame is coy, and but just rising from her bed. Oh, for a trowel and chance to burgle! Probably this enthusiastic young assistant who guides us round suspects nefarious thoughts, for he leads us back by devious paths till the heavy iron gate is reached, and closes with an ominous snap. Madame de Graafe safe inside, and safe outside in the chaos of a great city is—E. K.

### OVERCROWDED TOMATOES.

OVERCROWDING Tomatoes is a phase of "gardeners' greed" very many of us have been and probably still are troubled with. We begin by raising far more plants than are needed, and follow up this mistake—for a mistake it is to prepare many more than are wanted, especially when this means crowding in a young state—by planting them too thickly in their fruiting quarters. I hold that Tomatoes cannot well be grown too sturdily from the first, and also that starvation treatment does not pay. This sturdiness coupled with fairly luxuriant growth can only be maintained by allowing the plants plenty of room from first to last. When grown too thickly they shade and weaken each other, two plants very often not producing any more fruit than a single one would do occupying two-thirds of the room. Perhaps I am somewhat to blame in this overcrowding, but we live and learn, and it is my practice to avow any mistakes made when subsequent experience proves them to be such. The disease scare was responsible for many practices that otherwise would not have crept in, growing the plants rather thickly in comparatively poor solid soil being resorted to where it was not possible to save the foliage till such times as good crops were ripening. Starvation treatment, or what amounts to such, undoubtedly promotes a harder and more disease-resisting habit of growth, but it does not follow that this is to be recommended if there are any other ways of avoiding or defying disease. It would really appear that the diseases incidental to Tomatoes under glass are less virulent than formerly, a free use of fire heat and a good circulation of warm dry air being all that is necessary in most cases to ward off diseases. It is the more liberally treated plants, grossness, however, being guarded against, that give the best results.

If the plan of growing Tomatoes in comparatively poor, solid soil is being resorted to again this season, by market growers more especially, then there will still be some excuse for planting rather more thickly than I am about to recommend. Even in these cases, though, it may easily be overdone, especially where the plants are grown in the body of the house and trained uprightly. Placing the plants not much more than a foot asunder in rows 2 feet apart will not do. In all such cases it will be seen that it is the plants fringing the pathways that are much the most heavily cropped, those inside the rows unduly shading and weakening each other, the flowers dropping off or refusing to set fruit accordingly. Let

them be not less than 2 feet apart each way, and then there ought to be no great difficulty in setting large clusters of fruit from near the ground up to the roof, each plant carrying on an average of not less than 12 lbs. of fruit. The heaviest crops are usually taken from plants trained up the roof, and this plan of training is certainly the best that can be tried in small span-roofed structures or those, say, not more than 12 feet wide and proportionately high. In this case the plants are frequently put out 12 inches apart in a ridge of soil along each side or front of the house, but if it is intended to depart from the system lately much in vogue and to grow them more strongly, then they ought to be not less than 15 inches apart. A more serviceable class of span-roof house would be 14 feet wide, the same amount of hot-water piping being sufficient, this being a flow and return on each side. Here, again, a row of plants should be grown on each side and trained up the roof, and if they are disposed 18 inches apart it ought to be possible to take fairly heavy crops from two more rows of plants put out in the centre of the house, these being trained uprightly either with the aid of stakes or strings, the latter being much the cheapest method. These rows should be 2 feet apart, or else one on each side of central path, a distance of 18 inches dividing the plants in the rows. From the roof-trained plants an average of 18 lbs. of fruit should be taken, those less favourably situated in the centre of the house giving about 12 lbs. of fruit per plant.

When the plants have their roots principally or wholly confined to a narrow ridge of soil there is less likelihood of grossness prevailing; but it must also be remembered that they will require to be watered more frequently and fed more liberally than is the case when they are rooting in a bed of soil. There is nothing objectionable in planting in a level bed of soil, and if this is not excessively rich, and has been heavily trampled so as to make it extra firm, the Tomatoes will grow strongly without being over-luxuriant, and the watering pot or hose will not be required for use nearly so often. Soil that will grow garden vegetables, and especially Potatoes, well will usually answer equally satisfactorily in the case of Tomatoes, and under precisely the same conditions with respect to depth, drainage, and such like. There ought, however, to be one exception to this rule, solid or farmyard manure not being altogether suitable for Tomatoes. In addition to promoting grossness there is also the great risk of introducing the much to be dreaded eel worms with it, and for similar reasons an extensive use of decayed vegetable matter is to be avoided. Chemical and bone manures are most to be preferred, the latter, though slower in effect unless in a dissolved state, being the most lasting. Most horticultural sundriesmen supply manures very suitable for Tomatoes, and having tried many of them with results almost identical it would be manifestly unfair to give the preference to any one mixture. Soils also vary considerably in their character, and what may be most needed in one case would perhaps be almost wasted in another. A mixture that would hardly fail to suit the majority of soils consist of an equal weight, whether this be in pounds or hundredweights, each of superphosphate and kainit, adding sulphate of ammonia if the soil is somewhat clayey, and nitrate of soda if lighter in character, in quantity equal to one-quarter of the bulk of the two former; or to be plain, if 3 lbs. each of superphosphate and kainit is used add 1½ lb. either of sulphate of ammonia or nitrate of soda. This mixture should be applied at the rate of fully 1 lb. per square yard and thoroughly well mixed with the soil to a depth of not less than 12 inches. This I believe will be found a more economical way of using manure than by surface dressings, that is to say in dribbles, and the least likely to engender a too rank growth.

The plants being given the benefit of this fertile and fairly solid root run, and not allowed to form any surplus side shoots, will grow sturdily yet strongly, the lowest clusters of fruit are naturally most productive plants, reaching nearly or quite down to the ground. If any reader of the *Journal of Horticulture* can give particulars of practice superior to and at variance with what I have just described, and can advance good reasons for planting more thickly than I have advised in this article, he will confer a favour on myself beside many other readers.—W. IGGULDEN.

### SIXTY YEARS OF HORTICULTURAL PROGRESS. (1760—1820.)

(Concluded from page 326, vol. xxv.)

THOUGH the subject of forcing both fruits and vegetables was but imperfectly understood in the reign of George III., it was natural it should receive attention, because there were then no large supplies of either of these transmitted from the Continent, nor were means taken to obtain early crops in those western or southern parts of Britain where the weather promoted forward-



ness. There seems to have been an idea amongst some of our ancestors that forced fruit was very frequently lacking in the proper flavour; perhaps it might have been under some of the methods practised early in this century. By experiment and observation, however, our approved modern plans were slowly evolving themselves, and if the Georgian gardeners seemed sometimes to waste effort in trying first one way and then another, it was because they had not the means of getting information as to results which we now possess, so had to work out problems for themselves.

The forcing of Strawberries, when first attempted, was taken up energetically by several of the leading gardeners, such as M'Phail, Nicol, and Abercrombie. Commencing experiments were made by forcing the fruit in a pinery or Peach house; afterwards it became the practice to devote pits specially to this object, the plants, of course, being in pots. M'Phail advised that runners should be potted, in preparation, early in the season before, but many of the gardeners took up strong plants with their earth and then placed them at once in the forcing house or pit. Nicol advised a slow process, the heat being raised gradually, and Abercrombie preferred a rapid plan; he brought the pots from a cool frame where they had wintered into a warm house about the middle of March. Morgan it was, however, who showed that a succession could be had from November to June by right management. He started by forcing Alpines raised from seed, then he had Scarlets, and finished off with Pines. All gardeners used a rich loam for potting the plants, and kept the soil moderately moist.

There arose a good demand for early Kidney Beans towards the end of the reign of George III., and they were forced in Pine stoves or flued pits; the latter were often divided into partitions, so as to contain a succession of crops. Occasionally they were sown in a hotbed, and then planted out under handglasses. Abercrombie advised plenty of air and free watering, sowing in shallow soil, to earth them up gradually, but keeping down any runners. Nicol followed a method rather similar in forcing Peas, only he advised they should always be transplanted, whether grown in pits, or in the vinery, or Peach house, as was sometimes the practice. It was one of his beliefs that Peas in the open ground would be more prolific if they were transplanted.

Probably few gardeners now think it worth while to force Potatoes, but about 1812 much experimenting took place with the object of getting crops early in April; some grew them in pots placed in hothouses, and others planted them in frames 6 inches apart. Hogg, a well known market gardener, at a somewhat later period advised the use of an old Cucumber or Melon bed that had lost much of its heat, and his favourite early variety, obtained from Foxe's Yellow Potato, was called by his name. He raised a crop in seven weeks from the planting of the sets. One of his suggestions was, that "if frosts were sharp a better covering for all frames than matting was a layer of short hay."

Mushroom culture began to attract a good deal of notice, improvements being made on the old plan of growing them upon ridges of warm manure; also a sagacious gardener pointed out that as the plant was indigenous it might certainly be cultivated in ordinary soil during some part of the year and at the usual temperature, if desirable.

An impetus to Mushroom cultivation was given by the discovery of various ways of getting or making spawn, which soon became an article of sale in all large towns. Nicol discovered a process by which a bed of any required size might be formed into a mass of spawn by laying "courses" of stable manure, with earth between. In this way he obtained a crop about ten or twelve weeks after the bed was commenced, and it yielded longer than the beds ordinarily made. Then the manufacture of artificial spawn led to the discovery that it could be prepared for keeping in the form of bricks, such bricks retaining vitality several years if moisture was excluded. M'Phail advised growing Mushrooms in a lightly covered shed placed against the wall of a hothouse, and many put the spawn in boxes, pits, or baskets, which were used to fill up corners in pits or frames. A German method of culture was introduced by Oldacre. A peculiar compost was prepared, which was laid upon the shelves and bottom of a flued house constructed so as to afford a moderate steady heat, while but little light was admitted. Wales devised a plan for growing Mushrooms without manure, by warmth and moisture, and Williamson raised them economically in Cucumber and Melon beds. But the principal cultivators followed Abercrombie's advice, and watered moderately with tepid water, but did not grow them under a high and close temperature.

Propagation by inarching was the subject of much experiment early in this century. The origin of the practice is doubtful, but it had been occasionally tried as a kind of layering, the part of the shoot which it was wished to propagate being inserted into wood, or between wood and bark. It was presumed to have special

advantages in the case of plants which are reluctant to put forth roots. The two, whether in pots or in the open soil, were placed close together, and the layer or shoot which was to be bent or arched, was united to the stock, generally in the spring months. Having joined the parts they tied them closely, and then covered with clay or moss. It was customary to separate the shoot from the parent plant or tree in about five months, but twice or thrice that time was sometimes required. Professor Thouin, as the result of his inquiries about inarching, reported that gardeners knew thirty-seven different methods; practically, however, they were all varieties of two—viz., crown inarching and side inarching. The first of these was proved to be the best plan with young, hardy trees; the second was preferred for propagating delicate ones, or filling up blanks in branches. Knight made numerous experiments in inarching fruit trees, especially with the object of obtaining a supply of sap to enable a weak branch, by the help of a shoot from another part of the same tree, to swell and ripen its fruit. He thus got very fine fruit from Peaches and Nectarines where he would otherwise have had little or none. The Dutch tried inarching upon hedges of Hawthorn and Hornbeam, joining the shrubs together in a diamond or lozenge form, and leaving them attached. A funny experiment was the inarching of herbaceous plants, such as were of kindred species, the Cucumber upon the Melon, or the Tomato upon the Potato.

Possibly bulbous plants predominated in the gardens of seventy years ago, because some of this class were general favourites, and flowers now highly popular, the Rose, Dahlia, and Chrysanthemum for instance, only received a small share of notice. The Hyacinth rivalled the Tulip and the Narcissus, and even in the time of Miller there were reckoned to be 2000 kinds known in Holland, but a reduction took place, and a catalogue of 1820 enumerates about 300 only. It was the endeavour of our gardeners to produce fine double flowers, pyramidal in form, with large petals, and quite half the length of the stem. Dark colours were preferred to pale tints, provided they were distinct. Our English stock of Hyacinths was largely increased by their propagation, either from seeds or offsets. Many an amateur gardener was proud to exhibit to his friends a bed of choice Hyacinths, the result of much care and labour on his part. These beds were formed with a south aspect slightly elevated, and the English gardeners mostly used a compost for planting of leaf mould, cow manure, and sand; the Dutch added to this a little tanner's bark. Beds were planted in October or November, sandy earth placed round and over them, afterwards protection was given by hoops and mats. Maddock was very successful in getting fine seedlings, sowing in October or March, the boxes having equal parts of garden mould and sand. He left the plants untouched for three years in a moderately warm spot, then took them up in July. The Crown Imperial or Fritillary was an allied plant that was a favourite from its early blooming, and mostly increased by offsets as a quicker mode, and the common Fritillary, now seldom seen, was another favourite. There were numerous varieties.—J. R. S. C.

#### RHODODENDRONS.

I AGREE with "H. D." (page 250) in the main respecting the culture of this useful evergreen shrub, but I would like to add a caution for the benefit of those persons who have not had experience in any particular locality with the growth of Rhododendrons in the natural soil. I do not say they will not succeed in soil of a loamy character, but I know from experience that they will not exist here in the decayed turf obtainable on the place, which is generally termed loam.

"H. D." advises what to avoid—thus, "planting in soils containing a large percentage of lime or chalk." If he had substituted the word small for large I should have equally agreed with him. I know that Rhododendrons object very strongly to the smallest particle of chalk in the soil, this mineral I understand contains 75 per cent. of lime. The natural soil here is heavy and retentive of moisture, although it is not a wet soil in the sense of what a low-lying district would be; it is also much mixed with flint stones, which provides abundant percolating crevices for water in quantity. Chalk in its natural formation in most parts of the garden is not found within 3 feet of the surface, certainly not in that part where the Rhododendrons are growing. Chalk has been used as a surface dressing both for agricultural and horticultural purposes for many years before Rhododendrons were attempted to be grown. Although but small quantities have been used at a time the soil has become so impregnated with lime as to render it totally unfit for the growth of Rhododendrons even where nothing but the turf is employed.

As showing how small a quantity of chalk has been added to the soil in the form of a top-dressing, extending over so many years, it would be difficult to find any in solid form. When the beds for Rhododendrons were made here fourteen years since, with a view to economise peat, which is an expensive item in this part, some partly decayed turf that had been stripped off the old lawns was added to the extent of one-third. Where this came in contact with the roots of the Rhododendrons



they refused to enter it, and the plants made no progress at all. It was necessary to take them up and replace the compost entirely with peat. In addition we added partly decayed leaves and sand liberally. In a few years after I re-arranged the beds, removing the surplus plants to a recently added piece to the garden. Not having sufficient material to make up the beds of peat and leaves, I simply took out holes about 8 inches wider than the roots would occupy. The plants grew freely, but not grossly; the site being exposed, the growth was short-jointed, abundance of bloom being annually produced. As the roots neared the outside of the compost the length of shoot was reduced, the deep green of the leaves changed to a paler hue. As the roots afterwards came in contact with the natural soil growth ceased, and in some cases the plants died. Were it not for fear of occupying too much space other instances of failure could be adduced showing the unsuitableness of some soils to the growth of Rhododendrons.

I find manure fresh from the cowhouse excellent material for re-invigorating Rhododendrons that have somewhat exhausted the soil in which they are growing. By laying on the manure 3 inches thick, allowing it to gradually decay, the growth is much stimulated, the leaves quickly change colour, and the plants gradually improve. No time of year is better than the present for planting, provided, of course, attention in mulching and watering is given.

An edging of *Erica herbacea* gives, in my opinion, the best finish to a bed of Rhododendrons, especially if it is surrounded with grass. This low growing plant not only hides the soil, but gives a profusion of flower twice every year.—E. M., *Swanmore Park*.

### GRAFTING.

#### DOES THE WOOD OF THE SCION AND STOCK UNITE?

It has often occurred to me that the generally accepted theory that when grafting is performed the wood of the scion and stock never unite is not altogether satisfactory, and according to my own method of reasoning I have arrived at the conclusion that unless a complete union is effected between the outer wood cells as well as the bark, a permanently healthy and vigorous branch or tree cannot be produced by grafting, unless our ideas concerning the circulation of sap are at fault. If the crude sap ascends through the layers of wood how can it be conveyed from the stock to the scion when there is no connection between them? (except by means of the bark, through which the downward flow of sap passes). I am forwarding to 171, Fleet Street a portion of the stem of a Pear tree which has been sawn asunder through the grafted part. To me the union of wood as well as bark seems complete. A dark line shows clearly where the cut was made at grafting time. This appears to differ in texture from the wood parts around it; but the wood rings are perfect outside this dark line, and quite up to it. Is it not probable that after grafting is performed the soft woody substance immediately beneath the bark on both stock and scion unite, and form as it were a shell around the harder wood? After this has taken place the further development proceeds as in the case of ungrafted branches of trees—viz., each new layer of wood forms just under the bark, and completely encircles the older one. I shall be much obliged and interested to have your opinion of the matter, and also that of some of the numerous readers of the *Journal of Horticulture*.—H. DUNKIN, *Castle Gardens, Warwick*.

[The question of union between and circulation through the barks is an indifferent one, as these play a subordinate part and early disappear. The new wood and the new bark are developed from the *cambium* or sappy exudation between the junction of the stock and scion. The real union is effected by the alburnous layer or deposition of cellular tissue beneath the bark. There has been no union of the *heart-woods* of the stock and the scion in the example sent, or the grafting mark would have been obliterated during the course of eight or nine years; on the contrary, disunion of the wood is apparent, and the thin point of a penknife can be inserted between the wood face of the scion and that of the stock. The wood rings are perfect "outside the dark line," because this is new wood or superimposed growth, formed by annular deposits round the small original central core or stock which remains in its normal condition. These brief references to the specimens sent by our correspondent will enable those of our readers who may desire to do so to express their views on the general subject.]

### A CALL AT LAING'S.

LAING'S in Begonia time is a familiar place of call for those interested in flowers, but less so, doubtless, in the spring. The drawback to a special reputation for one class of plants is the fact that many persons form the impression that there cannot possibly be anything worth seeing when they are out of season. This is frequently a mistaken idea, and in no case more so than in that of the Forest Hill nurserymen, whose large and well-managed establishment can always boast of something to reward a visit. In the spring one of their best features are the Clivias, of which they make a speciality, and which they grow remarkably well. The collection is now in great beauty, and the increasing popularity of the plants is easily accounted for. Great have been the improvements in the plants of late years. They have been developed in size of bloom, size of truss and colour. It is true that the field of variation is a limited one, ranging from lemon to scarlet, and not embracing shades of purple and blue, but the former at least are not impossible of accomplishment, the lines being already materially deepened.

The following are a few of the best of the Clivias now in bloom or coming into flower:—Lord Wolverton, rich orange vermilion with enormous flowers, approaching the size of a small *Amaryllis*, and a dwarf grower; Stanstead Beauty, salmon orange with a nearly white throat, produces a fine truss, and is very dwarf and strong; *Purpurascens*, rich red with a purple suffusion, the deepest of all in colour, a vigorous grower; *Sulphurea*, pale sulphur; *Lemonæa*, lemon, a late variety that is just opening; *Princess May*, soft rosy salmon, a very large bloom, also a late variety; *Bronze Beauty*, bronze with lemon throat, distinct and good; *Mrs. H. Broome*, pale salmon rose, large flower; *Lady Wolverton*, brilliant salmon red, with very large reflexed flowers and a splendid truss, a very strong grower and in every way fine; *John Laing*, another splendid variety, orange scarlet with a fine truss, and a strong grower; *Joseph Chamberlain*, rich orange red, of fine foliage and habit; and *Purity*, clear salmon orange, a strong grower, of good habit and with fine foliage. The plants are all in perfect condition, and the fact of their doing so well under simple greenhouse treatment at Forest Hill should encourage amateurs and others to give them a trial. With bottom heat they can be flowered at Christmas if desired, and it is an easy matter to keep up a long succession of bloom. They do well in a compost of three parts loam and one peat when established, encouraging them with a more friable and porous medium while young. The plants from which suckers have been removed at Forest Hill are surrounded by a collar within the pot, and the space between this and the stem is filled with peat so as to encourage fresh growth. The plan is evidently a good one. With bottom heat the suckers, like Pines, emit roots quickly as soon as they feel the warmth; without this aid it is usually three years before small ones develop to a good flowering size, plants from seed requiring four years. Both as greenhouse and window plants the Clivias are worthy of attention, and it is worth while to note the length of time they will keep fresh in water, often six to seven weeks.

The Orchid department is growing rapidly, and the plants are in excellent condition. Amongst those in bloom may be noted a charming variety of *Odontoglossum asperum*, *Dendrobium Brymerianum* with its curiously fringed labellum, *Cypripedium hirsutissimum*, a fine variety of *Cymbidium Lowianum*, with a rich purplish chocolate lip; *Vanda tricolor superba*, one of the most beautiful varieties of that stately and beautiful plant; a fine form of *Dendrobium nobile*, named *Wallichianum*; and the beautiful *Odontoglossum primulinum giganteum*, with its large and beautifully rounded lip. This is a grand variety of a very charming Orchid. *Calanthe Sieboldi* is in bud.

Palms and Ferns are represented on an extensive scale, and so are Crotons and Dracenas. The collection of the Crotons is large, and the foliage full of fine colour. A few of the most noteworthy sorts are *Beauty*, *Laingi*, *Flamingo*, *Magnificent*, *Madame E. Bergmann*, *Thompsoni*, *superba*, *gracillima*, *Hawkeri*, *Rodeckianus*, *ruberrimus*, and *Sunbeam*. Of the Dracenas may be noted such fine sorts as *norwoodensis*, *Barteti*, *Madame Bergmann*, *Lindeni*, *Elegantissima*, and *Louise*. A case of *Bertolonias*, *Sonerilas*, &c., introduces some beautiful plants. Amongst the *Bertolonias* *Madame Van Geert*, *Ed. Pynaert*, *Souvenir de Gand*, and *Louis Van Houtte* were conspicuously beautiful. The same might be said of *Sonerila marmorata*, and another beautiful foliage plant too rarely seen is *Leea amabilis*.

The Forest Hill *Caladiums* are well known, and although it is at present somewhat early for them they are well worthy of inspection. Nowhere, probably, are the plants better managed, and their healthy and beautifully marked foliage awakens lively admiration. The varieties are too numerous for anything like a complete list to be given, but the following may be named as a few of the best:—*L'Automne*, *Louis A. van Houtte*, *Mrs. Laing*, *Charlemagne*, *Baron Rothschild*, *John Laing*, *B. S. Williams*, *Mdme. Groult*, *Candidum*, *Chactas*, and *Mdme. Imbert Kœchlin*. These are all both attractive and distinct.

More modest in growth, but not less beautiful in its way, is the charming little *Saxifraga sarmentosa tricolor superba* with its brightly tinted foliage. So beautiful a plant ought to be largely grown. A handsome *Begonia* named *Arthur Malet*, with leaves of burnished red, is also well worthy of attention.

In the stove one of the most striking objects is *Anthurium Laingi*, recently certificated. The spathe is white and of great size. It forms one of a large batch of *Flamingo* Flowers, which make a brilliant display in the portion of the structure devoted to them. *Plumbago capensis alba* is in bloom, and so is the not very familiar plant, *Gloneria jasminiflora*, which has small pure white flowers very much resembling *Bouvardias*. It is a free bloomer and undeniably attractive. *Sarracenas* are grown in goodly quantities, and so is *Dionæa muscipula*. Plants not too often met with are *Paulinia thalictrifolia* and *argentea*, which are curiously Fern-like in appearance, and do well under the same treatment as Ferns.

It is too early yet to say much about *Begonias*, but the thousands of young plants coming on in shallow boxes, the huge mounds of soil awaiting use, the large quantities of pots, and the extensive piece of ground in the nursery ready for the reception of the immense number of plants to be put out in the course of a few weeks are full of significance. Preparations for *Begonia* time are in full swing, and as the demand for the Forest Hill strains from all parts of the world goes on increasing the preliminaries for each successive season are heavier than those of its predecessor. This is satisfactory to the growers, and the fact that the foreign demand is so great will perhaps afford gratification to many who have no interest in the sale of the plants beyond that of patriotism.





**EVENTS OF THE WEEK.**—The Committees of the Royal Horticultural Society will meet on Tuesday, April 11th, at the Drill Hall, James Street, S.W., when a good display of Orchids and other flowers is expected. On the same day the Committee of the National Rose Society will hold a meeting at the Hotel Windsor, Victoria Street, and a gathering of the Horticultural Club also takes place. In addition there will be the customary auction sales.

— **THE WEATHER IN LONDON.**—As notified in another paragraph we have again to record a week of splendid weather. Clear, bright days have been prevalent, the sun being quite hot. Many fruit trees in the south are now in full bloom, and it is to be hoped that severe frosts will not set in, or the results will be disastrous.

— **WEATHER IN THE NORTH.**—Slight frosts occurred on the nights of the 26th and the 27th ult., and this morning (4th) we have  $4\frac{1}{2}^{\circ}$  recorded with hoar frost. On the whole, although cold winds have generally prevailed, the past week has been fine for the season. Saturday was a thorough April day. On the previous night a good deal of rain fell. More would now be welcome.—B. D., *S. Perthshire*.

— **ROYAL HORTICULTURAL SOCIETY.**—The next meeting will be held on Tuesday, April 11th, when the Fruit, Floral, Orchid, and Narcissus Committees will meet at noon in the Drill Hall, James Street, Victoria Street, Westminster. Mr. Everard F. im Thurn has promised a paper on "Orchid Life in Guiana." A large attendance of the outside public is expected.

— **NATIONAL AMATEUR GARDENERS' ASSOCIATION.**—A paper on "The Show and Alpine Auriculas: Their History and Culture," was read by Mr. James Douglas, Great Gearies, Ilford, at the monthly meeting of the above Association, which was held in the Memorial Hall, Farringdon Street, E.C., on Tuesday last. There was a large attendance, and Mr. H. A. Needs presided. After detailing the history of the Show and Alpine Auriculas, Mr. Douglas gave cultural directions, pointing out the items that were essential to success. A vote of thanks was accorded Mr. Douglas for his excellent essay.

— **GARDENING AND FORESTRY EXHIBITION AT EARL'S COURT.**—As previously announced in these pages, a series of special shows will be held in connection with this Exhibition during the forthcoming summer, and the dates have been arranged as follows:—May 13th (opening day), special flower show; May 18th and 19th, Orchids, &c.; June 28th, Roscs, &c.; July 12th, Roses, &c.; July 26th and 27th, Carnations, Picotees, &c.; August 9th and 10th, flowering and foliage plants, &c.; August 23rd and 24th, Gladioli, &c.; September 13th and 14th, Dahlias and autumn flowers, &c.; September 27th, 28th, and 29th, hardy fruit, &c. A comprehensive schedule has been issued, and in addition to substantial money prizes a limited number of gold medals will be awarded to meritorious exhibits.

— **SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, MARCH, 1893.**—Mean temperature of month,  $45.1^{\circ}$ . Maximum on the 30th,  $67.3^{\circ}$ ; minimum on the 29th,  $20.4^{\circ}$ . Maximum in the sun on the 31st,  $116.2^{\circ}$ ; minimum on the grass on 29th,  $14.2^{\circ}$ . Mean temperature of the air at 9 A.M.,  $44.1^{\circ}$ ; mean temperature of the soil 1 foot deep,  $41.7^{\circ}$ . Nights below  $32^{\circ}$ , in shade, fourteen; on grass, twenty-two. Total duration of sunshine in month 164 hours, or 45 per cent. of possible duration. We had two sunless days. Total rainfall, 0.49 inch; rain fell on seven days. Average velocity of wind, 10.4 miles per hour; velocity exceeded 400 miles on six days—fell short of 100 miles on seven days. Approximate averages for March—Mean temperature,  $40.8^{\circ}$ ; sunshine, ninety-eight hours; rainfall, 1.73 inch. A bright and dry month; very warm days, but many frosty nights. The average daily maximum is considerably higher, and the daily range is larger than in any of the last seventeen years, but the mean temperature was a little higher in 1882. The rainfall is less than in any March during this period, the last fourteen days being rainless. The sunshine was more than we have had in any March or April since the record began in 1881, and more than the average amount for June, July, or August.—J. MALLENDER.

— **TITS AND FRUIT BUDS.**—Observing what Mr. Hiam says at page 255, I desire to say that I have done what he advises for between forty and fifty years; but I preferred to watch the movements of the birds, and examine the bushes and trees immediately after they were busy on them taking the buds.—W. T.

— **MESSRS. FOSTER & PEARSON, LIMITED.**—We are informed that the business lately carried on at Beeston, Notts, by Messrs. Foster and Pearson, the well-known horticultural builders and engineers, has been converted into a limited company, and that all accounts due to and owing by the late firm will be received and paid by the said Company, who will in future carry on the business under the style of Foster & Pearson, Limited.

— **PLANTING BULBS.**—The proper depth and manner of planting many of our flowers is a science not thoroughly understood. I have observed this in many things. One example will suffice to illustrate my meaning. As a test I planted several clumps of Scillas, the one half about  $2\frac{1}{2}$  inches, and the other about 4 inches deep. The latter are of a darker and brighter blue, so much so that they appear a different variety.—T.

— **SPIRÆAS.**—To the list given by Mr. Parrant (page 253) allow me to add *S. filipendula* fl.-pl. Growing about 15 inches high, and producing abundance of pure white double flowers, it is a most useful plant for the front of the herbaceous borders. *S. venusta*, sometimes named lobata or the Queen of the Prairie, is useful for the back of the herbaceous border, the deep Peach blossom colour of the panicle-clustered flowers form a pleasing contrast with other plants.—M.

— **MR. J. MUIR.**—Our old correspondent, Mr. J. Muir of Margam, S. Wales, although not contributing so much to the horticultural press as formerly, appears to be as active as ever in his locality. Last week he was appointed one of the overseers of the parish of Margam for the seventh year in succession. He was also returned unopposed as a guardian of the union in which he resides, and at the same time he contested a seat for the Margam Local Board, against two of the largest employers of labour in the district, with success. Perhaps Mr. Muir will become a bard in time.

— **SUNNY TORQUAY.**—That this favourite winter resort in Devonshire is favoured as regards warmth no one will doubt who has been there. I was very much surprised when there in November at the Chrysanthemum Show to see Tuberosus Begonias, Zonal Pelargoniums, and blue Lobelias in full summer dress, and all within a few feet of the sea. Such was the case in the autumn of 1891 especially; we, here at Swanmore, having experienced  $6^{\circ}$  frost, and this is considered rather a favoured spot as regards the climate. These are only a few of the many plants to be there seen at that time of the year, but sufficient to show what a favoured place is Torquay.—E. M.

— **CHIONODOXA LUCILÆ FROM SEED.**—This hardy bulbous plant reproduces itself freely from seed in the open when the seed pods are allowed to ripen on the plants. We have a few bulbs planted in various parts of the rockery, and numerous other plants annually spring up, many of them several feet away from the original roots. As a rule, three years' growth is required to enable the bulbs to attain a size to produce flower spikes. The roots of this bulb enjoy a deep root run, and a fairly heavy soil seems to suit its growth, producing not only larger flower spikes but robust foliage.—E.

— **ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.**—It will be recollected that shortly before the Royal Horticultural Society of Aberdeen held its Fête in the Central Park, Kittybrewster, in August last, Messrs. James Cocker & Sons raised an action against the office-bearers of the Society to have them ordained to receive certain exhibits of Roses and Dahlias which Messrs. Cocker had tendered, and which the Committee had refused. The action first came before Sheriff Robertson, who decided that on the strict construction of the Society's rules Messrs. Cocker were not entitled to exhibit, and he therefore dismissed the action. Messrs. Cocker appealed to the Sheriff-Principal, but the hearing of the appeal was delayed in consequence of a proposal having been made for a friendly settlement of the matters in dispute. Ultimately, however, the proposal made by Messrs. Cocker for a settlement was rejected by the Society, and the appeal was accordingly heard by Sheriff Smith at his last sitting. He has now given judgment recalling the interlocutor of August 15th, 1892, repelling the three first pleas in law for the defenders, and finding that it is now unnecessary to pronounce any order under the petition, finds the pursuer entitled to expenses.—(*Aberdeen Daily Free Press*.)



— **HYACINTHS AT WESTMINSTER.**—The Hyacinths in the beds facing the Houses of Parliament are just now making a charming display. The colours are admirably arranged, and the spikes of bloom are remarkably fine for bedding Hyacinths. It is not often that such a show of bloom may be seen in the centre of the metropolis so early in the year.

— **GARDENING APPOINTMENTS.**—Mr. Robert Palmer, for nineteen years gardener to the Right Hon. Lord Lyttleton (now Viscount Cobham), Hagley Hall Gardens, has retired, and has been succeeded by Mr. D. R. Dixon, gardener to J. Amphlett, Esq., Clent, for the past seventeen years. Mr. A. Gillett has been appointed head gardener to Laurance Hardy, Esq., M.P., Sandling Park, Hythe, Kent.

— **SHROPSHIRE HORTICULTURAL SOCIETY.**—The spring Show of this Society was held in the Music Hall, Shrewsbury, recently. In nearly all the classes there was a good entry and a splendid display of blooms. The collections were exceedingly fine, and in the two classes for bouquets and some others the competition was very keen. The Judges were Mr. Blair, Trentham, and Mr. Spinks, Birmingham.

— **WAKEFIELD PAXTON SOCIETY.**—At the recent meeting of the members of the above Society Mr. G. W. Fallas, one of the Honorary Secretaries, announced that Colonel Charlesworth, M.P., had given £5 towards the reduction of the debt on the Society's recreation ground in Pinderfields Road. Mr. MacPherson, who should have been the essayist, was unavoidably absent, and under the circumstances Mr. Hudson, gardener at Sandal Grange, kindly read an excellent lecture on "Spring Flowers," which Mr. William Paul, F.L.S., read before the Council of the Royal Horticultural Society some time ago.

— **WALKLEY AMATEUR FLORAL AND HORTICULTURAL SOCIETY.**—At the last meeting of the above Society, under the presidency of Mr. Cuckson, Mr. M. H. Willford, a very successful amateur plant grower, gave a useful and practical essay on "The Fuchsia." His treatment of the subject embraced a brief reference to the history of the Fuchsia, followed by cultural details, including propagation, potting, training, and feeding. He gave a selection of varieties, both double and single, and especially commended some of the best of the old varieties as worthy of cultivation. Mr. Willford received the thanks of the meeting for his interesting paper.—E. D. S.

— **STRAWBERRY CULTURE.**—At a recent meeting of the Edinburgh Horticultural Association a paper on the cultivation of the Strawberry was read by Mr. Mungo Temple, Carron House, of the berry as grown in the outside as well as when forced. Mr. Temple said the commercial value of the Strawberry at the present time might be gauged from the fact that in one day he had been informed the consignment of Strawberries to Glasgow was no less than 68 tons. The finest Strawberries he had ever seen were exhibited in the Music Hall in Edinburgh twenty-five years ago, and they were fruits of the variety known as Moffat's Duke of Edinburgh. On the cultivation of the berry the lecturer spoke on the various kinds of soil suitable for the different varieties, the necessity for air and sunshine, and the somewhat too frequent practice of allowing the plants to remain in the ground till both the soil and the plants were exhausted.

— **THE GOOSEBERRY CATERPILLAR.**—A correspondent, writing to the *Essex Standard*, says:—Those who, like myself, are lovers of that inviting though humble fruit, the Gooseberry, should now be anticipating the appearance of the caterpillar. A riddance of this pest is easily effected. Learning through the *Journal of Horticulture* that dusting the trees with a compound of lime and soot would destroy it, it struck me that syringing with soot water might prove equally effectual. Hence, during the month of April last, I syringed therewith thirty-three Gooseberry trees, which the caterpillar had threatened with destruction, twice a week for a fortnight only, the result proving its total disappearance for the entire season. My apprehensions as to the solution's effect on the foliage were groundless, and the fruit (Crown Bob) was never finer. One quart of soot will make 9 gallons of mixture, but as this ingredient is most rebellious against blending with plain water, the operator must not shirk extra exertions in his efforts to ensure a complete blend. The following is, perhaps, the best method of mixing: Put into a 2-gallon jar 1 quart of soot, and pour thereon about 2 quarts of boiling water, adding 1 ounce of common soda; shake thoroughly during two or three minutes and transfer to the liquid tub, after which give the jar two more vigorous rinsings, and make up to 9 gallons. I do not know how far it would be judicious to apply soot water to Rose trees for aphides, but purpose during the forthcoming season trying its effect with caution on three or four trees of no very great value.

— **IRISH DAFFODILS.**—The writer of an appreciative notice of the work of Mr. Baylor Hartland at Cork, in the *Irish Daily Independent*, observes:—"Of the climate Mr. Hartland speaks enthusiastically. For the cultivation of Daffodils and Narcissi it is the finest in the world, he says. After the climate, the next question of importance is the market and the facility for transit. Mr. Hartland is quite satisfied on these points. He can send all his flowers, packed in flat baskets, by the mid-day mail, from Cork, via Dublin and Holyhead, and they are on sale at Covent Garden and other centres at nine o'clock on the following morning. Mr. Hartland finds that, as a rule, he can beat the Scilly Islanders in the matter of quick transit to London. From Cork the time is only eighteen hours, while from the Scilly Islands it is sometimes two days."

— **SHAMROCKS FOR CHICAGO.**—The same writer goes on to say:—"The most unique order a florist ever received has just come to Mr. Hartland. It is for supplying 1000 pots of Shamrocks to the Irish village at Chicago. The order has come from Lady Aberdeen, who takes a deep interest in the flower-growing industry at Ardcairn, and has received from it many choice collections of blooms. The first consignment of the Shamrocks will be sent out on the 16th of April. Mr. James Scott, the Queenstown shipping agent, has made arrangements for having the Shamrocks sent on the deck of the mail steamers, and the pots will be watered at intervals during the voyage. This is the first time that a consignment of growing Shamrocks has been sent to America, and should the experiment succeed there is no reason why a thriving industry in exporting Shamrocks should not be established."

— **IRISH INDUSTRIES.**—Mr. Hartland is also described as an enthusiast in the matter of the revival of Irish industries, especially in the direction of making better use of the land than is done at present. With a fine climate and fair facilities for transit, he believes there is a fair opening for an extensive trade in flowers and certain species of fruit along the southern seaboard. But in order to make such an industry possible he is of the opinion that agricultural schools, supported by the State should be established in convenient places. Without these nothing very particular can be done in carrying the industry into rural districts where it is needed, and where it can be prosecuted to the best advantage. In pointing out how the industry might be established and worked to advantage, Mr. Hartland is doing splendid work at Ardcairn. Personally he is a typical Irishman, enthusiastic to a degree, and he enjoys great popularity in his own neighbourhood, where he gives a considerable amount of employment and spreads knowledge of horticulture which will be found of much advantage by-and-by, when the industry develops, as it seems destined to do.

— **THE CUCKOO.**—The very fine weather with which we have been favoured during the past three weeks probably accounts for the early appearance of the cuckoo, whose note was heard by several people in the woods near Maidstone on April 3rd. He usually arrives in this neighbourhood about April 14th, and I sincerely hope he may not have reason to wish he had waited another fortnight before visiting us, for on April 14th and 15th last year, after a spell of beautiful weather similar to that which we are now experiencing, came the snowstorm which was so disastrous in this part of the country. I learn through a friend that the cuckoo was heard on Good Friday near Bodmin, in Cornwall. On April 2nd I heard the little bird that in the New Forest is called the "cuckoo's messenger," and may be so called in other districts. It is here called the "snake bird," why I cannot tell. If I remember rightly it is one of the tree climbers, and is always heard just before the cuckoo.—C. R. F.

— **THE ARNOLD ARBORETUM.**—In the "Arnold Arboretum" Harvard University possesses, in the estimation of a writer in "The Century," the "finest tree museum in the world." Kew takes the lead among botanic gardens, but is not strong in its trees. The Arnold Arboretum, on the contrary, consists of 160 acres entirely given over to the cultivation of woody fibre, trees, shrubs, and climbers in all their infinite variety. It is not exactly a park, nor yet a garden, in spite of its fruits and flowers. It aims at showing trees as they grow naturally in woods, the different varieties being grouped together according to the botanical system of De Candolle—Magnolias first, because that tree has the most perfect flower; Conifers last, because in them the flower is most imperfect. In like manner the shrubs are conspicuously labelled, in a place set apart for them, where the soil is rich. It will interest those who are concerned in forestry to know that the young trees are raised from seed in the nurseries of the Arboretum, and in consequence of their careful cultivation and selection are reported to be singularly symmetrical, healthy, and promising.



— TESTIMONIAL TO MR. AND MRS. DODWELL.—Mr. and Mrs. Dodwell celebrate their golden wedding on the 20th of this month (April), and it is proposed by some of his old friends who have long watched the work done by Mr. Dodwell in the development of the 'Carnation, and who have very pleasing memories of the social meetings of the Carnation and Picotee Union at Oxford, to commemorate this auspicious event by the presentation of some suitable piece of plate, and it is felt that this object will have sympathy and support. It is proposed to limit individual subscriptions to 2s. 6d. or 5s., which may be sent direct to Mr. R. Sydenham, 190, Bristol Road, Birmingham, Treasurer of the fund.

— EASTER MONDAY IN LONDON.—Londoners made the most of the magnificent weather which prevailed on Monday last, the first Bank Holiday of the year. The parks, commons, and other open spaces of the metropolis were thronged as though all working London had decided to spend the day outdoors. It is difficult to determine the actual numbers who visited each place, but the crowd on Hampstead Heath was estimated at 150,000; 76,042 gained admission to the Crystal Palace; about 40,000 were at Kew Gardens; 30,000 went to Hampton Court; nearly 9000 visited Windsor Castle; 30,062 were admitted to the Zoo; 13,645 were at the South Kensington Museum; and 10,348 entered the Tower of London.

— RHODODENDRON NOBLEANUM AND ITS VARIETIES. — These Rhododendrons certainly deserve to be grown in far greater numbers than they are at present, for there is no hardy shrub in existence which produces such grand masses of showy flowers during February and March. At the time of writing (March 10th) we have half a dozen plants in full beauty, several trusses having begun to open their flowers three weeks ago, and although we have on several occasions since then experienced from 4° to 7° of frost the blooms have not been injured in the least. This is to a great extent accounted for by the fact that the plants occupy a very sheltered position, being protected by a very high wall on the north and east sides, and although they are 18 feet from the wall the great height of it gives them ample protection. I am confident, however, there are favourable situations in many gardens, where these useful spring flowers might be easily grown.—H. D.

— PRESENTATIONS TO HORTICULTURISTS.—Some interesting presentations in recognition of services rendered to the old Brighton Chrysanthemum Society were made at the recent meeting of the Brighton and Sussex New Horticultural and Mutual Improvement Society. Mr. J. Bunney was presented with a silver watchguard, a silver cruet-stand, and an illuminated testimonial; Mr. A. Fry with a silver cruet-stand and an illuminated testimonial; Mr. Rupert Miller with a gold watchguard and an illuminated testimonial; Mr. W. Richardson, Mr. J. Spottiswood, and Mr. J. Turner, each with a marble timepiece and an illuminated testimonial; and Mr. T. Thwaites with an illuminated testimonial and a set of Charles Dickens' works. Testimonials, beautifully illuminated with Chrysanthemums, and suitably inscribed, were also presented to Messrs. F. Collis, A. E. Golding, J. Hills, G. House, Mark Longhurst, George Miles, A. Netley, A. Scutt, and George Wickham, members of the old Committee.

— EARLY FLOWERS IN SCOTLAND.—A correspondent writes as follows to the *Edinburgh Evening Despatch*:—A walk through the Glen from Roslin to Polton on March 25th, showed the season to be an exceptionally early one in the matter of blossom. The catkins or "lamb's tails," as the country folks call them, of the Hazel are fast being superseded by those of the Alder, and the conspicuous flowers of the Ash have already begun to take the place of the dingy-looking bloom of the Elm. Many of our small spring flowers, too, are already in full bloom, some of them in great profusion. Banks and sheltered hedgerows have been bright for some time with the yellow flowers of the Coltsfoot and Lesser Celandine. The show of Anemones lends at present a distinctive charm to the woodland, their white flowers offering such a pleasing contrast to the glossy green leaves. The delicate blossoms of the Strawberry-leaved Cinquefoil are here and there to be met with. In some places the woods are covered with an undergrowth of Dog's Mercury. Two interesting little plants are also in bloom, the Golden Saxifrage and the Moschatel, the flowers of which somewhat resemble each other, although belonging to quite different families. Before reaching Polton the Bluebell-like flowers of the Periwinkle were seen early in monopolising the shady banks. These plants are all exceptionally early this season, and to see them in flower was an additional pleasure as well as an unexpected reward for the walk through this lovely glen.

— PLANT DISEASES AND BOTANY IN AMERICA.—As announced in the *Journal of Horticulture* for the 23rd ult., there are now as many as thirty-two botanical stations in the United States carried on by the various State Governments. The subject which receives most attention at these stations is that of the fungus and bacterial diseases of cultivated crops and fruit trees and their treatment and cure. A laboratory for the study of plant diseases has recently been fitted up in connection with the agricultural experiment station of the University of California at Berkeley. It has been arranged that a botanical survey of Nebraska shall be undertaken by the botanical seminar of the university of that State. The almost unknown flora of the north central portions of Idaho has recently been investigated by a commission acting under the auspices of the botanical division of the U.S. Department of Agriculture.

— RAINFALL IN SUSSEX.—The total rainfall for the past month at Abbots Leigh, Mid-Sussex, was 0.51 inch, being 1.57 inch below the average. The heaviest fall was 0.24 inch on the 1st. Rain fell on five days. This is the driest March in a fourteen years' record. The nearest approach to it was that of 1883, when the amount was 0.71 inch. The maximum temperature in the shade was 65° on 30th; minimum, 23° on 19th; mean maximum, 51.2°; mean minimum, 34.2°; mean temperature, 42.7°. A month more remarkable for the amount of bright sunshine than for the small amount of rain. Wild Cherries, Plums, Gooseberries, and Currants were in full bloom at the close of the month.—R. I.

— THE WEATHER IN MARCH.—The weather during the past month has been of an exceptional dry character. Bright sunny days with a total absence of east winds have prevailed, but the frosts at night have been of rather a severe nature. Rain fell upon six days during the whole month. Maximum mean any twenty-four hours was 0.17 on the 1st; minimum mean any twenty-four hours, 0.02 on the 6th; total during the whole month, 0.47, against 1.43 of 1892. Notwithstanding the very dry month of March, I have registered more rainfall by end of March, 1893, than I registered by the end of the three corresponding months of 1892. By the end of March, 1892, I had registered 3.90; end of March, 1893, I have registered 4.92.—E. WALLIS, *The Gardens, Hamels Park, Buntingford, Herts.*

— THE WEATHER—A REMARKABLE MONTH.—In the matter of weather the month that has just passed away has undoubtedly been one of the most highly favoured of recent times. In London the thermometer on the three last days of the month rose to between 67° and 68°. The latter reading has only been equalled once in the Marches of the past twenty years, while the mean of all the daily maxima observed in London during the month has had no parallel in any March of the same extended period. The sunshine totals for the entire month are not yet to hand, but from information already collected it is quite certain that in this respect also the March of 1893 will hold a very distinguished place. During the week ending Saturday last the bright sunshine registered over the United Kingdom generally amounted to 66 per cent. of its possible duration. Over the eastern, central, and southern parts of England the per-centage varied from 75 to 77, and in the south-west of England it reached 81, while in the Channel Islands, the percentage was as high as 91. The remaining feature of interest in our recent weather has been the general and marked deficiency of rainfall. The total amount for the whole month was less than half an inch over a considerable part of England and Wales, as well as in the east of Ireland, and less than three-quarters of an inch in the east of Scotland. For the majority of our meteorological stations the rainfall records do not extend back for more than twenty-seven years, and in some cases for only twenty-two years. An examination of the available data shows that over a considerable portion of England last month was the driest March on record, and at Roche's Point, where the total fall up to 8 A.M. yesterday, was only 0.11 inch, or smaller than at any other station from which returns are yet to hand. At Oxford, where rainfall has been recorded for a very long time past, the month was drier than any March for at least forty years past; and, as regards London, we must go back as far as the year 1854 to find a March with so small a rainfall. The London records for the past eighty years show that during this long period there have been only seven years with a March rainfall of less than half an inch. These were 1820, with a total of 0.33 inch, 1830 with 0.30 inch, 1840 with 0.32 inch, 1850 with 0.21 inch, 1852 with 0.26 inch, 1854 with 0.33 inch, and the present year with 0.39 inch. It is rather curious to observe that the first four cases of a very dry March followed each other at intervals of ten years. The only portion of the kingdom in which last month's rainfall amounted to anything like the average was the extreme north of Scotland.—(*Daily News.*)



— THE EARLY SEASON.—A correspondent writes:—"Although we have not yet seen any swallows or martins in this neighbourhood (Cheltenham), it may interest some of your readers to know that we heard the cuckoo for the first time on Saturday, the 25th ult. As to vegetation, everybody is of the same opinion, that we are here fully a month more forward than we have ever been before. Our Plum trees have been in flower as long ago as the 19th ult., and we have two Apple trees already in leaf. We have been gathering out-of-door Mushrooms on and off during the last fortnight—a most unusual occurrence, and one, my gardener says, unprecedented in these parts. As all the bush fruit and fruit trees are so forward, it will be a serious matter for gardeners if we have the usual April and May frosts."

— EARLY FLOWERS.—The season is so peculiar in forwardness that I venture to send a rough list of plants in bloom gathered March 29th, writes a correspondent to the *Standard*, in an ordinary walk of three miles. A few years ago there was skating on Good Friday (March 23rd), and deep snow on Easter Day (25th). Many more flowers might probably have been added had more research been given:—Wood Anemone, Small Celandine, Marsh Marigold, Helleborus foetidus and Helleborus viridis, Gorse, Ground Ivy, Dog Mercury, Colts-foot, Winter Heliotrope, Primrose, Cowslip, Daisy, Golden Saxifrage, Palm Willow, common Nut, Narcissus pseudo-Narcissus, Dog Violet, Sweet Violet, Hairy Violet, Barren Strawberry, Daphne laureola, Moschatel, Blackthorn, Draba verna, Whitlow Grass, Wood Sorrel, and Blue Speedwell.

— WELSH WINE.—The *Wine Trade Review* says: "We give in our present issue the result of several important sales of wines from private cellars. Some of the prices realised are noticeable, but the most interesting incident recorded is that at the sale at Birmingham of Mr. Lawson Tait's wines by Messrs. Ludlow, Roberts and Weller, four-and-half dozens of wine grown on the Marquis of Bute's Welsh estate were sold at the rate of 115s. per dozen. The wine is called the Castle Coch, and was produced in 1881. From the particulars given in the catalogue we learn that the vineyard on the Marquis of Bute's estate in the Taff Valley consists of about 3 acres of volcanic soil favourably situated for the growth of the Vine. It is added that the 1881 wines were exceptionally good, and all were secured by Mr. Lawson Tait. The Marquis's vineyard has been frequently mentioned, but we think it will be a surprise to most people to learn that the produce, even of a good year, is considered to be worth 115s. a dozen. If the soil is suitable for an extension of the vineyard, perhaps the result of the sale at Birmingham will hasten the commencement of the work."

— PRUNUS TRILOBA.—I can confidently recommend this *Prunus* as being one of the gems among hardy deciduous spring flowering shrubs. The flowers are produced from almost every joint of the previous year's growth, somewhat after the manner of *P. sinensis* flore-pleno. They are, however, of a beautiful soft rose colour in some instances, in others white tinted with rose, so exquisitely shaded as to be beyond description. These flowers are about the same size of those of the well-known *Prunus* already named, but unlike that variety only a portion of the flowers come double, a point not without due significance from an artistic point of view. We have a half-standard tree of this fine *Prunus* in the grounds here. It is about 5 feet in height, with a head almost as much in diameter, while the outline (without pruning) is perfectly symmetrical. At the present time each of the numerous twiggy shoots are completely studded with expanded or opening buds, the countless numbers of which combine to create a picture of delicate and pristine beauty which the inmates of an English hothouse or the flowering trees in foreign lands could not easily surpass.—H. DUNKIN, *Castle Gardens, Warwick*.

— DEW ON PLANTS.—The subject of dew appears to be still involved in some controversy. An experimental contribution to it has been recently made by Herr Wollny, who used plants in glazed pots with earth of varying moisture, some of these being allowed to radiate freely on favourable nights, while others were screened. The following, says "Nature," is a brief outline of Herr Wollny's views:—Dew depends partly on evaporation from the ground, partly on transpiration. It is at present doubtful whether it precipitates from the air share in it or not. A cloudy sky weakens the cooling process without stopping it wholly. With copious radiation, the temperature minimum is at the surface of the plant-covering (of the ground), and here the aqueous vapour rising from the warm ground is partly precipitated. With increase of the ground heat downward there is increase of the water brought up by the plants, which is given up as vapour and condensed. The more moisture there is in the ground, the more water is evaporated from the ground

and the plants. Dew formation is usually favoured by the larger number of stomata on the under surface of leaves than on the upper. On a given surface of ground the dew is more plentiful the stronger the plant organs above ground, and the closer the plant growth. The temperature of still air increases from the surface to a certain limit (at about 5 feet over grass it was sometimes 4° or 5° C. warmer than on the ground). In experiments with blotting paper, cotton wool, feathers, and asbestos, the first was much moistened, while the others showed dew in drops. Bodies of organic origin attract more moisture than those of mineral (a case of hygroscopic absorption). For vegetation, the author considers the benefit of dew but trifling. Of the whole annual precipitation at Munich dew only gave 3.23 per cent.

— NITRATE OF SODA.—In a paper on the Santa Isabel Nitrate Works, Toca Chile, read lately before the Scottish Institution of Engineers and Shipbuilders, and now printed in the Institution's Transactions, Mr. G. M. Hunter has something to say regarding the origin of "caliche," as nitrate of soda is called in its native state. Some contend that "caliche" is a marine deposit, others that it is an animal deposit, while others say it is a vegetable deposit. Mr. Hunter holds the first of these views. The coast of Chili has several times been disturbed and upheaved by volcanic agency, and he suggests that a large tract of sea was enclosed and heaved up to the present height of the nitrate region, and there formed an inland sea, which, after a lapse of time under a tropical sun, evaporated, leaving the salts to percolate and form the beds of nitrate. From the formation of the ground, showing depressions and ravines leading to the sea, it is evident that immense volumes of water at some remote period have passed through them. In proof of this, Mr. Hunter points out that no "caliche" is ever found in such places, the accepted opinion being that there has been a "wash out," as it is called. During a later period than that of the formation of the "caliche" great floods passed over the plains, as is shown by the deep tracks of rivers, and the smooth washed appearance of the surface. Such periodical floods are common in tropical, rainless regions, and would not call for special remark but from the fact that wherever these river tracks or washed surface appear no "caliche" can be found. This is so well known that even the workmen never attempt to search for it in such places. The only surface indication for the presence of "caliche" is rising ground covered with small black stones. The "caliche" in its native state is white, very compact and amorphous, not unlike rock salt, but when rich in iodine it assumes various colours, according to the composition and quality of the iodine it contains. For example, at times it contains masses of bright yellow, red, or blue, and again wholly composed of a dull black colour, in which state it requires an expert to distinguish it from costra or rock.—(Nature).

### MAGNOLIA CONSPICUA.

THE large white flowers produced by this deciduous tree are particularly handsome, and when seen in good condition invariably receive a large share of admiration. It should always be planted in a sheltered position, against a south wall if possible, because during the best of seasons we usually have a few sharp frosts while the flower buds are swelling, if not when the flowers are fully expanded. If in the latter stage 7° or 8° of frost quite spoil them, and blacken the unopened buds.

This *Magnolia* is one of those plants which well repay the trouble involved in affording a canvas protection during the flowering stage, even a coping board or stone does much towards protecting the upper portion of a tree. I have several times noticed fully expanded flowers within a foot of such protection quite uninjured, while those on other portions of a tree have been much disfigured. It is also a great advantage to keep the shoots as close to the wall as possible, because when frosty nights follow bright days radiation affords a considerable amount of warmth, and often prevents the flowers being injured by frost.

Where old trees have grown a considerable distance from the walls to which they are trained, the best time to set about the work of establishing growth nearer to it is as soon as the flowering period is over. The branches ought to be thinned freely, cutting out those which show signs of enfeeblement, and training those retained as near to the wall as possible. Numbers of strong shoots will then be produced during the growing season. A few of the strongest of these should be stopped, the others trained in thinly their whole length, removing all side shoots and growths made late in the season. Under this treatment numbers of shoots will be made, varying in length from 6 to 18 inches; every one of these will give a flower at the point, and the following year, if they are retained, instead of being spurred back, will produce sturdy growth a few inches in length at almost every joint. Each of these short growths will carry a bloom. In this way a perfect mass of flower is obtained. When this system is established the only pruning necessary after flowering is to cut out a few of the oldest shoots to make room for young ones to be laid in during the summer, always bearing in mind that these young shoots carry one flower the first season, and flower the whole length the second year.—H. DUNKIN.



## BAUHINIA CANDIDA.

THE Bauhinias, travellers assure us, are amongst the most lovely of tropical flowering plants. Owing, however, to the difficulty of inducing

is about 6 feet in height, and carries its flowers in clusters in the axils of the leaves at the points of the shoots. Some of the individual flowers measure nearly 4 inches across ; they are pure white, delicately veined with green. The pale green leaves are two-lobed, and



FIG. 54.—BAUHINIA CANDIDA, *Reich*  
(*B. variegata*, *W.*)

them to flower satisfactorily under cultivation, we have but few opportunities of forming our own opinions upon their merits. Their beauty, as exemplified by a specimen of *B. candida*, now flowering in the Palm house at Kew, is certainly not overrated. This plant

nearly 3 inches across. This species is very rare in gardens, though it has been known for over a century. The Kew plant, from which our illustration (fig. 54) has been prepared, was raised from seed sent to Kew from Madras in 1883 by Sir M. E. Grant Duff.—A. B.





## CHRYSANTHEMUM ETOILE DE LYON.

WITH this I am sending you half a dozen blooms of Etoile de Lyon, cut from bush-trained plants grown for decorative purposes, and we find it one of the very best for late blooms. This experience may perhaps interest readers of the *Journal of Horticulture*.—JOHN LAMBERT, *Powis Castle Gardens*.

[The flowers were fresh and exceedingly fine for the time of year.]

## JUDGING CUT BLOOMS.

I AM pleased that "Sadoc" (page 202) is of my opinion, that if two flowers are put side by side the best is soon detected, and I do not see what injustice is done if, when side by side, a Jeanne Delaux is pitted against a Stanstead White. It is a decided advantage to the exhibitor who produces good flowers of difficult varieties to grow, like Mrs. Alpheus Hardy, Golden Dragon, or Thunberg. A practical judge can easily measure the comparison, and they have the advantage of being judged under the same light. This is not the case with stands placed long distances apart and in darker parts of the hall. "Sadoc" gives 4 points, we will say, to an Avalanche in stand A; when he finds this flower afterwards in another stand he may give it 4½. Can he accurately trust to his eye to measure this slight difference without having them near together?

I may not be quite clear where I say "Give a point for colour and freshness." The colour and freshness of individual blooms should, as stated by "Sadoc," be taken into consideration when measuring the comparison; but an exhibitor who tastefully arranges his colours and also includes difficult varieties like Refulgens, giving his stand a more pleasing and fresh appearance, should have a point for this over one that stages too many of all one colour although good flowers, and in accordance with the regulation of the schedule.

"Sadoc" asks me at about how many exhibitions do I find more than one bloom gaining six points? Six points is the highest I think, and I mentioned that number to explain my meaning. Judges are very shy of giving the maximum or six points to any flower meaning perfection, and to one show where it occurs I should say I find quite four lacking. If I had mentioned all those gaining five points, it means for the judge to carry his premier bloom to more. "Sadoc" is the first judge I am aware of who has confidence enough in his judgment to award a premier prize to a bloom without first lifting it out to compare it with one, or several we will say, only half a point less, when the points had been given to each a distance apart.—J. LAMBERT, *Powis Castle Gardens*.

## THE N.C.S. IMBROGLIO—MR. DEAN AND MR. TRINDER.

The following letters have been sent to us for publication.

Dogmersfield Gardens, Winchfield,  
April 3rd, 1893.

To the Editor.—Dear Sir, I have received a letter from Mr. Richard Dean concerning my letter which you kindly inserted in your last issue (page 258), and as it reflects on your correspondents, I venture to forward it to you, with a copy of my reply thereto.—I am, dear sir, yours truly, G. TRINDER.

## MR. DEAN TO MR. TRINDER.

National Chrysanthemum Society,  
Ranelagh Road, Ealing, London, W., March 31st, 1893.

Mr. G. Trinder, Dogmersfield Gardens, Winchfield. Sir,—In the *Journal of Horticulture* of March 30th appears an article, headed "The N.C.S. Committee versus Godfrey and others," and bearing your signature, in which you make reference to "recent discreditable proceedings connected with the Committee of N.C.S." and in the last paragraph of this article you allude once more to what you term "highly discreditable proceedings."

To many of the statements which have appeared in the *Journal of Horticulture* reflecting upon the National Chrysanthemum Society I have paid no attention. They have been confined to the columns of that paper; they were either anonymous or from writers not connected with the Society, and who could have no personal knowledge of what they were writing about, or from obscure persons gratifying merely personal feelings. It is different in your case. You are a member of the N.C.S.; you hold a deservedly high position in the estimation of your brother gardeners: you are at the head of one of the most important gardening establishments in the country, consequently any statement bearing your signature carries considerable weight with the gardening public. But your position also necessitates you should be very careful what statements affecting others you publicly make, and therefore you are bound to ascertain they are *bonâ fide* before you make public reference to them.

As it is impossible I can allow your statement to pass unnoticed, I am bound to bring it to the notice of my Committee. I have no hesitation in saying the officers and Committee of the N.C.S. are quite as honourable and high-minded as yourself, and they cannot permit themselves to be publicly charged by you with being associated with "discreditable proceedings" without calling upon you to justify your charges. I assume you have personal knowledge of certain facts to which you make allusion. I cannot imagine you would base your charges merely upon secondhand and probably interested statements. If you have a knowledge of this character

I am sure you will feel it to be your duty to set it forth fully, so that immediate steps may be taken to inquire into its correctness.

I need scarcely state that in charging a number of gentlemen who are largely known in the horticultural world with proceedings of a "discreditable character" you incur a very grave responsibility, which you must accept.

As I intend to bring your accusations before a meeting of the General Committee to be called at an early date, I shall be glad to have your reply at your earliest convenience.—I am, Sir, your obedient servant, RICHARD DEAN, *Secretary*.

## MR. TRINDER TO MR. DEAN.

Dogmersfield Gardens, Winchfield,  
April 3rd, 1893.

Mr. Richard Dean.—Sir,—Your letter to hand on Saturday evening last, and, in reply, I beg to say that the recent discreditable proceedings to which I refer in my letter to the *Journal of Horticulture* are those alluded to in the letters that have appeared in that paper—I mean those in connection with the member of the Floral Committee who voted against the lovely "Beauty of Exmouth" Chrysanthemum, and then offered to buy it; and also your own recent action in the election of a Chairman to that Committee. If you consider such conduct that of high-minded and honourable gentlemen, I beg to differ from you very considerably.

I think the majority of the readers of the *Journal of Horticulture* well know that the Editor is too honourable to allow "statements to appear from persons who could have no personal knowledge of what they were writing about, or from obscure persons merely gratifying personal feelings." You will please withdraw my name, for the present, as a member and subscriber to the N.C.S. I shall now forward your letter, and a copy of my reply thereto, to the Editor of the *Journal of Horticulture*.—I am, Sir, yours faithfully, G. TRINDER.

[Mr. Dean is in error in his allegation that our correspondents have "no personal knowledge of what they write about." Some of them know rather too much to please Mr. Dean, and withhold their names to prevent themselves being pestered with letters through the post. Mr. Ballantine's remark at the annual meeting with respect to the correspondence in these columns that "he was able to say an accession of members was distinctly traceable to that cause" had the effect of bringing several communications, and the methods Mr. Dean chooses to adopt have brought many more. We think we are right in suggesting that those gentlemen might have prevented the controversy if they wished; and at least they ought to be satisfied with the result of it—"a distinct accession of members." That statement is our justification for sustaining interest in the N.C.S.]

## FLORAL COMMITTEE OF THE N.C.S.

BUT for the letter of Mr. George Gordon in your last issue (page 258), I should not have again intervened in this controversy.

That gentleman appears to have discovered in my letter (page 240) an "inuendo" which certainly was not present to my mind when I penned the letter in question, and one which I do not think is presented even by the most strained construction of its contents. Surely it is permissible to credit Mr. Dean with the genuine intention to secure a chairman absolutely independent of late events without its being a necessary inference that the other nominee to the office was less independent or more implicated. When I desire to convey a meaning I do not resort to "inuendo." I say what I mean straight out, and assume the full responsibility for my statement.

In the present case it certainly never occurred to me to attribute to Mr. Gordon any association with the recent differences which have agitated the governing body of the N.C.S. I am glad to say that, save for the information gleaned from your columns, I am absolutely in ignorance who has and who has not been concerned in the contest, but the general impression left on my mind is that if there is one member, especially of the General Committee, who has not been drawn into the struggle it is Mr. Gordon.

My personal knowledge of the incidents of the late election is limited to one chance interview some two months ago, an interview lasting for two minutes covering the question "Would I accept the post of chairman if elected?" and the reply that "If, by so doing, I could be of use to the N.C.S. and help to restore peace within its borders, I would."

From that moment until I learned the result of the meeting of the General Committee I had no communication, direct or indirect, with Mr. Dean, or with any other officer of the Society, nor did I even know that there was to be any contest. Certainly, had I been aware that Mr. Gordon was to be proposed I should not have allowed my name to be brought forward, for I can imagine no one better qualified to fill the position of chairman. But the election had taken place, and for the reasons already stated I saw no sufficient reason to refuse the result and thereby throw upon the Society the inconvenience and delay attending the summoning of another meeting of the General Committee.

However, the incidents disclosed in your issue of the 16th ult., in my opinion, entitled me to disregard mere considerations of convenience, and these incidents, together with the additional light since thrown upon the present position of the Society, have decided me, under no possible circumstances to be connected with its Floral Committee either as Chairman or member.

One other point. If Mr. G. Trinder (page 258) will refer again to my letter he will see that it is not of the discussion of the "Godfrey" case that I, in common with others of your readers, am tired. It is with the acrimony and personal animus with which the discussion is carried on that we are weary. Those who have decided to keep the "Godfrey" case steadily before the Society until it shall have received a



fair and square adjudication upon its merits are fully within their rights, but cannot some of your correspondents manage to put forward their views as to this and other grievances without that bitterness of expression and those objectionable and unnecessary personal allusions which tend to alienate the sympathy of many who upon the main issues may not be disposed to differ very greatly from their views?

A good case is best served by a quiet statement.—CHARLES E. SHEA, *The Elms, Fooks Cray.*

[A great truth is conveyed in motto form in the last line of Mr. Shea's communication, and we shall be glad if it can be borne in mind by controversialists; at the same time we believe that some of our correspondents did not intend to be "bitter," but only forcible under provocation. We have refrained from publishing several letters as unsuitable in tone. It is just because many persons feel that the "Godfrey" case has not received "fair and square adjudication on its merits" that disquietude exists. Is it allowed to continue because it strengthens the Society?]

#### CHRYSANTHEMUMS AT EARLSWOOD.

ALTHOUGH in taking what was the only course open for an honourable man to take in relation to matters of a very unpleasant nature, Mr. W. Wells of Earlswood seems to have secured the enmity of certain members of the N.C.S.; yet do I think that his action merits the approbation of every honest man, and as evidence of this I may point to the fact that so far from suffering in any way in his business he has benefited. Being in his locality a few days since I thought I would look in and see how Mr. Wells was progressing, and how far the Chrysanthemum trade was developing. The jealousies and petty discords of the members of the N.C.S. are of no interest to me, but the progress of horticulture in any direction has much, and of that form of horticulture especially which does not feed on animosities and personalities, but rather upon the highest, purest, and most desirable of our aspirations. Well, I found at Earlswood house after house full as well could be of Chrysanthemums by tens of thousands in the rooted cutting stage, and many late ones yet to be rooted, whilst also the stocks of old plants would easily have furnished 20,000 more if needed. As it was, an immense number of young plants had been sent out both directly and through the trade, and because of the cool system of culture which prevails the plants are all stout and sturdy, and being well packed in moss suffer nothing in removal.

It was pleasant to learn that very large numbers of the finest new varieties are sought after by working-class growers, who wish to obtain the best so soon as their price will admit; the demand on Vivian Morel, for instance, yet the premier Japanese in cultivation, had been beyond precedent, and next year a few of the best of the past season will also be very popular, though none stand out of the general ruck in the same way that the one mentioned does. Mr. Wells, of course, keeps pace with the requirements of the times by securing stocks at once of all the best in cultivation, and to show that he is above personal prejudices, he speaks in the warmest terms of one dark variety now being put into commerce, W. Seward, as being the very finest of the class ever offered. His own sport from Vivian Morel, Mrs. W. R. Wells, pure white, and if set one of the finest whites in cultivation, has not received very courteous treatment; but Mr. Wells has great faith in it, although in putting it into commerce he has expressed his intention to refund a certain portion of the cost to purchasers should the sport not prove to be true. To my mind the fact that Vivian Morel will throw white flowers, and pink ones on the same plant shows that a fixed white sport is certain at some time or other. Tuxedor, old pot marigold orange, a beautiful and striking flower, and borne on very dwarf stocky plants, Mr. Wells regards as likely to be one of the gems of next season. However, time will show. The list for the present year handed to me of some 600 varieties is remarkable because of the almost exceeding abundance of new sorts, and the absence of what a few years since were high-class varieties. Such honours as the nomenclature of flowers give are usually very fleeting, and it would seem as if the average of Chrysanthemum immortality was about three years. Such is fame; who remembering this would have flowers named after them?

One of the Earlswood specialties is found in seedlings, for everybody must now raise a number of seedlings, and Mr. Wells produces a few thousands yearly from his own and imported seed. I saw boxes on shelves of recently sown seed, where the young plants, not unlike Parsley seedlings, were coming up thickly. I saw myriads of others from last year's seedlings, now rooted cuttings, saved from the best, and being tried again in that way. It would almost seem as if seedling raising would become to many a source of infinite trouble—a giant white elephant; but at Earlswood Mr. Wells has special strong partiality for single varieties, and these are very popular with ladies as cut flowers. Many of them are very beautiful; some singularly formed sorts, that the florist would reject, are often the varieties that sell freely. Amongst some of them Sarah Wells, violet pink; Purity, pure white; Mrs. Juikes, chocolate and gold; Alethia, deep crimson chestnut; Earlswood Terracotta, Crimson King, Miss Ida Bird, pure white; Jane Wells, flesh colour; Rose Queen, large rosy pink. These are but a few out of a long list of Earlswood and other seedlings.

In very few nurseries can a finer show be made in the autumn of pot Chrysanthemums than at Earlswood, for there is a huge and very long span-house, the which is at the blooming time cram full of plants. A portion of it is devoted to the growth of Niphetos Roses, tied up to stakes, and which bloom here on the strong loam in great profusion. The Chrysanthemums are stood amongst these plants in the autumn. The

other part of this large house is devoted to Tomatoes, the which it would seem are in good demand locally as anywhere else, for thousands of pounds of fruit are sold during the season. No doubt for all things grown on these Reigate slopes the pure air and abundant light and sunshine is exceedingly helpful. The district is one famous for its many Chrysanthemum growers, and to the credit of the Reigate men be it said that they do not grow for prizes so much as for love, for their local autumn show has done more for our garden charities in a few years than any other has, national or local.—D.

#### ROYAL HORTICULTURAL SOCIETY.

MARCH 28TH.

SCIENTIFIC COMMITTEE—Present: Dr. Müller (in the chair), Mr. McLachlan, Rev. W. Wilks, Mr. Wilson, Dr. Scott, and Rev. G. Henslow, Hon. Sec.

*The Antiquity of the Citron in Egypt.*—A communication was received from Dr. Bonavia, in which he referred to M. V. Loret's paper on this subject entitled *Le Cedratier dans l'Antiquité* (Paris, 1891). That author mentions several writers from 2 B.C. to 360 A.D., and states that it was cultivated in the fourth century A.D. in Upper Egypt (Coptic, "Ghitré"), while a Citron is said to have been found in a tomb of the twelfth century B.C. It is also figured on the temple of Thothmes III. at Karnak; fifteenth century B.C. From a drawing it would seem that even the "fingered Citron" might have been known. Dr. Bonavia discusses the probable source of the Citron in Egypt as being brought by traders through the Persian Gulf and Red Sea, for he thinks that all varieties originated in South China and spread westwards. The value of the Citron was supposed to be purely medicinal by the ancients, and M. Loret alludes to one use, namely, for affections of the spleen, the true value of which Dr. Bonavia corroborates.

*Peridermium Strobi.*—Mr. Plowright sent specimens of this fungus with the following observations:—"Last July I found in the garden of Mr. C. E. Boyes, at Oakwood House, Tottenham, that the Currant bushes were affected with *Cronartium ribicola*, specimens of which were sent to the Scientific Committee, as this fungus had not previously been recorded in Great Britain. In the same garden were some young trees of *Pinus Strobus*, which were roughly trimmed so as to form a screen or hedge. On these trees must have occurred the æcidiospores of the *Cronartium* at some season of the year, Prof. Klebalm, of Bremen, having shown that these form the life cycle of this fungus. On March 19th of this year I visited Oakwood House, and was pleased to find the *Peridermium* in perfection. It will be noticed on the specimens sent that the mycelium of *Peridermium* is perennial, causing a certain amount of hypertrophy in the affected branches, forming generally a fusiform enlargement of the twig. The peripheral extremity of the branch suffers somewhat at first, and eventually dies. The mycelium of the *Cronartium* is annual. With the heteroecious *Uredineæ* sometimes the æcidiospores have permanent mycelia as is the case here, at other times the mycelium of the teleutospores is thus endowed as with the *gymnosporangia*."

*Ustilago on Psamma arenaria.*—"The so-called *U. hypodites* which occurs on this Grass is doubtless a distinct species. It is not common in Great Britain and appears only to have been found upon the east coast. The specimens sent herewith are interesting as having been produced by a root which was transplanted from the sea coast three years ago into a town garden, and which still produces diseased stems. One of the specimens shows a curious distortion, consisting of a twisting of the stem within the sheath. This may be due to the fungus, although in the majority of cases this condition does not occur."

*Polyanthus Blue Primrose.*—Mr. Wilson exhibited a seedling from Oakwood Blue Primrose, with a very large flower, a Marianne North (pale blue), and a plum-blue Polyanthus, it being the first occasion of this strain assuming the umbellate form.

*Cucumber Roots Diseased.*—Mr. Hurnard of Hingham sent a specimen, which appeared to be attacked by the common "eel worm." It was referred to Mr. McLachlan for further examination.

*Fasciated Cotoneaster.*—A specimen of this common malformation was sent by Mrs. A. Stuart of Edinburgh. Mr. Henslow had observed a bush in a garden at Penmaenmaur, on which nearly every branch was fasciated.

*Tuberculated Stem of Ailanthus glandulosus.*—Mr. Wilson brought a specimen having a tuberculated structure, 6 inches broad and 3 inches deep, issuing from around the junction of stem and root. The knob-like tubercles consisted of "embryo buds" agglomerated together. What the original cause might have been which produced the hypertrophied condition, with arrest of axial growth of the buds, it was impossible to say.

*Dimorphic Aralias.*—Mr. Tidmarsh, Curator of the Botanic Gardens, Grahamstown, sent some foliage of two species of *Aralia*, which, he observes, would certainly be regarded as four species had he not known the plants from cuttings upwards. The leaves of *A. Veitchii* when growing in a poor soil are about 4 inches long, and one-fifth of an inch wide. Those sent were grown in a poor soil under glass. The leaves of the same species planted out in a mass of fresh compost in a hothouse, with a moist atmosphere, and at a temperature of 60° to 90° F., were 5 inches long, and 1½ broad. Hence, while the former are linear, the latter are broadly lanceolate and tapering at the base. He also sent leaves of *A. reticulata*, which were upwards of 2 feet in length and 6 inches in breadth. The plant was 10 feet high, planted in the open on the



banks of a stream, but too far above the water to be benefited much by it. It was under Willows, which to some extent protected the foliage from the frosts of several degrees experienced at Grahamstown. Mr. Tidmarsh added that he had no inside plants of this last species with the narrow-leaved foliage. He remarks, "We can propagate from cuttings of the narrow-leaved form, but fail to do so with the large-leaved form. This plant behaves in a similar manner to *Araucaria excelsa*; the young growth of which, while still possessing the narrow Juniper-like leaf, will strike from cuttings, but we cannot succeed with small side-shoots from an old trunk, these latter shoots being furnished with a thick bark and stout foliage of the mature tree." Mr. Tidmarsh raises the question whether the larger leaves of these *Aralias* may not be the naturally mature form, and the smaller foliage characteristic of the young stage, as with the *Eucalyptus*. An examination of the epidermides of the leaves sent shows that the number of cells in the same area of the broad-leaved form is to that of the narrow leaved as fifty-five to thirty-eight (upper), and as forty-four to thirty-six (lower), so that this element does not support Mr. Tidmarsh's view, inasmuch as the cells, being smaller on the larger leaf, would *per se* suggest its being the younger.

### PANSIES AND VIOLAS UNDER GLASS.

I HAVE seen during the early part of March in some gardens Pansies and Violas being almost ruined by being kept shut up too closely in frames, the plants drawn and weakly-looking, and too tender for planting out and encountering cold winds and spring frosts. I therefore warn readers against this practice. It is a mistake to treat Pansies and Violas so tenderly, and leads to disappointments. Here in Birmingham, which does not enjoy the best of atmospheres, I could show robust and healthy plants of both grown in frames in my town garden, and they have no protection but lights over them in bad weather, but with air admitted. For some time the lights have been off altogether, excepting when cold east winds have prevailed.

Planting out should be done as soon as possible when the plants are well hardened; the soil having been prepared, then plant rather deeply and firmly. If the growth above ground is long, peg it down so as to secure it from injury by wind. In advising planting out at once, I have in my mind the possession of strong, well rooted plants, which can be removed with some earth about the roots.

Purchasers from florists should insist on having only strong, well-rooted plants sent, each rolled up in a piece of paper securely, with damp moss about the roots, not sent, as many are, several in a box, scarcely rooted, and arriving in a dry state. Such plants should not be planted out at once, but be nursed in a frame or small pots until they can be put out with safety. Weakly plants do not come into good bloom until July, when the weather is generally very trying to Pansies. I am assisting a friend in the midlands who does a very great business in Pansies in getting away his orders, and from 3000 to 4000 plants pass through my hands each week, each done up separately, well rooted, strong stuff, rejecting any which are badly rooted and not likely to please.—W. DEAN.

As a southerner, I should like to add my testimony to that of Mr. W. Dean (page 156) on this matter. After reading the remarks on "Florists' Flowers" by "D., Deal," I came to the conclusion that the plants are coddled too much. I have a few hundred plants, and I have not lost six other than by the havoc of moles. During the cold weather the moles burrowed through the frame and turned out a few plants. Apart from this calamity I do not think I have any losses to record.

My plants are protected in small frames made of half-inch match-board, and the lights are old windows pulled out of dwelling houses. They neither fit into grooves or lay flat on the framework, and this is the only covering or protection the plants have had all winter. During severe weather the soil and plants were frozen very hard. After the long spell of frost a little loose litter was thrown over the lights till the bed was properly thawed. The cracks in the boards are numerous and wide, and every current of air that blows goes right through the frame, and this I credit with assisting to keeping my plants healthy. Not a sign of damping is to be seen; the plants remained at a standstill all the winter, so that the mildew as well as damping is unknown. Now the plants are commencing to grow a little they will, perhaps, be more susceptible to these evils. The lights have been left off the frame for weeks together, and the plants have only been watered by the rain. The protection is afforded to provide against extremes of weather, not to resist the cold. I consider March the most trying month for Pansy growers. A couple of days with an east wind will do more damage than a whole winter.

I quite endorse Mr. Dean's remarks anent early planting. If there is a secret in Pansy growing it is in planting as early as possible. When we get the plants out early in March it is seldom we are troubled with that mysterious "going off" too prevalent in many gardens. Last season I lost very few plants where early planting had been followed, but I lost many seedlings through late planting. I think last summer was a fair test too in this respect. It is only the fact that my soil is exceedingly heavy and retentive that has made me abstain from planting so long. The plants are easy to shelter from the bitter east winds if 6-inch pots are employed to cover them. They can be placed over the plants each night, and in severe weather remain over them for a day or two without doing any appreciable damage.—JAS. B. RIDING.



### ROSE SHOW FIXTURES IN 1893.

- June 20th (Tuesday).—Westminster (N.R.S).  
 „ 28th (Wednesday).—Clifton,\* Richmond (Surrey), and Windsor.  
 „ 29th (Thursday).—Eltham.  
 July 1st (Saturday).—Crystal Palace (N.R.S.).  
 „ 4th (Tuesday).—Bagshot, Canterbury, Diss, and Gloucester.  
 „ 5th (Wednesday).—Croydon, Ealing, Hereford, and Lee.\*  
 „ 6th (Thursday).—Bath, Farningham, Norwich, and Sutton.  
 „ 7th (Friday).—Hitchin.  
 „ 8th (Saturday).—Reigate.  
 „ 11th (Tuesday).—Wolverhampton.†  
 „ 12th (Wednesday).—Tunbridge Wells.  
 „ 13th (Thursday).—Workshop (N.R.S.), Harleston, and Woodbridge.  
 „ 14th (Friday).—Helensburgh.  
 „ 15th (Saturday).—New Brighton.  
 „ 20th (Thursday).—Trentham.  
 „ 22nd (Saturday).—Manchester.  
 „ 27th (Thursday).—Halifax, and Southwell.
- \* Shows lasting two days. † Shows lasting three days.

I shall be glad to receive the dates of any Rose Shows not mentioned above for publication in my next list of fixtures, which will be issued early in May.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

### EARLY ROSES.

WHILST strolling in the neighbourhood of Enfield on Easter Monday I noticed a Gloire de Dijon Rose growing on a wall facing south, and some of the young shoots of the current year's growth were several inches in length, the flower buds being discernible. I do not know if Roses generally are so early this year, and on this point perhaps some of your numerous readers can enlighten me. It would also be interesting to have a record over series of years as to the dates when the first Roses expanded in the open air. Certainly there are prospects at present of our having outdoor Roses by the end of April if frosts do not check their career.—SUBURBAN.

### THE PARENTAGE OF ROSES.

IN my former article (page 214) upon this interesting subject, I spoke chiefly of the origin of Hybrid Perpetuals, though I had some incidental allusion to the beautiful modern Noisettes and Teas. Among the most delicately graceful of these is Belle Lyonnaise, which owes its characteristics to the Gloire de Dijon, and of which I may add there is an absolutely perfect and most exquisitely coloured illustration in Mr. William Paul's book, entitled "The Rose Garden," perhaps the most comprehensive work existing on Rose cultivation. There also will be found a very fascinating artistic delineation by an eminent artist of the Maréchal Niel, which, as I learn from other publications, the great Waltham rosarian was the first to introduce into England. He was also the first cultivator of Gloire de Dijon, so greatly eulogised for colour, substance, fragrance, and durability by the Dean of Rochester in his book on the Rose. Its merits receive almost equal recognition from another high authority, Mr. Thomas Rivers in his "Rose Amateur's Guide," which I have recently been reading with exceptional interest.

The Maréchal Niel, which is perhaps with one exception—that of its grandsire—the grandest Noisette Rose in cultivation, is directly descended from the Cloth of Gold through Isabella Gray, an American production. Cloth of Gold—a superb Rose, of which in this country an absolutely perfect specimen is seldom to be seen—is the offspring of Lamarque, which I recently saw in all its integrity at Inch Manse, in Wigtonshire. The finest Maréchal Niel I have ever seen is also in the same county. It is the much-valued possession of Mr. David A. McClew, of Chapel Rorsan, in Kirkmaiden. It covers the whole side wall of his conservatory, and has often towards the end of April as many as 500 simultaneous blooms. The flowers would doubtless be considerably more imposing in dimensions than they usually are if he allowed fewer of them to grow; it is, nevertheless, at that early season of the year a very impressive picture of floral luxuriance.

Most of the leading English rosarians, such as Mr. Paul of Waltham and Mr. Cranston of Hereford, grow their Tea and Noisette Roses in large houses specially constructed for this purpose. There is, however, at least one striking exception. Mr. Benjamin R. Cant of Colchester, who won last year the fifty guinea cup of the National Rose Society, grows all his in the open air. Towards the end of the leafy month of June, when all Teas and Noisettes cultivated in glass houses are "faded and gone," he has thousands in full bloom. His greatest achievements, nevertheless, have been gained through the medium of Hybrid Perpetuals.

I see that your correspondent, "D., Deal" (page 251), makes some references to my first article in the *Journal of Horticulture* upon the "Parentage of Roses." In reply to his observations, which are characterised by courtesy, I have to say I neither affirmed that the modern Roses he specially alludes to were seedlings, nor denied that



they were sports. I was perfectly aware before writing my article that sports are variations from the leaf bud rather than the seed, and, therefore, entirely distinct from seedlings. My knowledge of the subject was sufficiently extensive to make me perfectly familiar with this fact. If one special variety is a sport from another, it is, as I can prove, quite customary for rosarians to speak in that instance of the "parent Rose," as Mr. William Paul does of The Bride, when describing it as "a pure white sport"—not a seedling be it noticed. Of Catherine Mermet am I not at least equally entitled to say that "the origin of the Duke and Duchess of Fife may be attributed to Etienne Levet and the Countess of Rosebery," or that "Marguerite Dickson is a beautiful daughter of Merveille de Lyon?" Again, your correspondent affirms I make a mistake in characterising Mrs. Paul—an impressive sport from Isaac Pereire—as a Hybrid Bourbon Rose. But Isaac himself is sometimes described as a Hybrid Perpetual; occasionally, by way of variety, I presume, as a Hybrid Bourbon. How, then, can Mrs. Paul have become, unless by some miracle, an exceptionally "pure" specimen of the Bourbon class?

Speaking of Hybrid Bourbon Roses in his "Rose Amateurs' Guide," Mr. Thomas Rivers says, "This magnificent race of Roses owes its origin to the Bourbon Rose, *itself a hybrid*; thus showing the illimitable powers of Nature when assisted by Art." I am gratified to find that your cultured contributor, while paying adequate attention to modern French Roses, does not under-estimate the value of such British productions as Marguerite Dickson, Jeannie Dickson, the Duke and Duchess of Fife, Prince Arthur, Corinna, Sappho, Her Majesty, Spenser, and Mrs. John Laing. DAVID R. WILLIAMSON.

### CULTURE OF CINERARIAS.

WHEN Cinerarias are required to flower during the autumn and winter the seeds should be sown about the end of March or the first week in April; but for spring use a sowing may be made in June or July. For seed-sowing I prefer pans to pots, as the young plants are liable to become overcrowded when grown in pots. The pans should be perfectly clean and carefully drained, placing some rough material over the drainage. They should then be filled with some fresh sifted loam and leaf soil in equal proportions, with a little sharp sand added, pressing it tolerably firm and leaving the surface smooth. Before sowing the seed some growers recommend applying boiling water through a fine-rosed can, which I believe is a very good plan to adopt. When the soil is cold the seed should be sown thinly and evenly and slightly covered, then gently sprinkled with tepid water. The pans should be covered with panes of glass and placed in a shady position in an intermediate house, where the seed will quickly germinate.

When the seedlings appear remove to the greenhouse, and when large enough to handle prick into pans and place in a cold frame on a bed of coal ashes and kept rather close for a few days to encourage root-action. When the foliage begins to touch again prick off the plants, but in the place of pans use boxes. I find they thrive much better when so treated than when put singly in small pots. As the plants progress they should be potted, using 5-inch pots for the first potting, and when the roots reach the sides of the pots transfer the plants to 6-inch or 8-inch pots. The soil for the final potting should be of a much richer nature than that previously advised. A compost of fibry loam three parts, leaf soil one part, burnt earth one part, and one part well dried cow manure, with a good sprinkling of sharp sand will form a suitable mixture for them. The soil should not be pressed too firm in the pots, for although most plants like firm potting, the Cineraria thrives best when the soil is light and friable. When the pots are full of roots liquid manure may be applied once or twice a week with advantage.

My method of cultivation differs somewhat from that usually practised respecting the positions in which the plants should be grown. Most growers recommend growing them facing north, whereas I find they succeed equally as well when grown with a southern aspect, providing a slight shading is provided them during bright sunshine. The shading should not, however, be permanent or sufficiently thick to exclude light. As the sun gets off them it is very beneficial to the plants if the lights are taken off, and a slight dawning with the syringe be afforded them, this being of great benefit as regards keeping the foliage clean and healthy, also resisting in a great measure the ravages of insects and other pests. It is also a good plan to leave the lights off all night during the summer if the weather is at all favourable, thereby letting the plants have the benefit of the dew, this being very beneficial to them.

Cinerarias are subject in all stages of growth to various insect pests, green fly being particularly troublesome, and if allowed to become established is very difficult to eradicate. A close watch should, therefore, be kept, and at the first appearance of fly the houses or frames in which the plants are growing should be fumigated. Care must be taken not to give a too strong application at one time, it being much better to fumigate in the evening and again the following morning; the foliage often presents a scorched appearance if too severely fumigated. Although these plants are subject to green fly, I think these attacks may be averted if careful and timely attention be paid to all matters pertaining to their culture. I think the appearance of fly is due to the plants receiving a check, either by not having a sufficient supply of water or allowing them to become root-bound. Soft rain water should be used where obtainable.

Soot water is an excellent stimulant for Cinerarias. The soot should

be placed in a bag and immersed in a tub of water, allowing it to soak for twenty-four hours before using. I may mention that I have adopted the foregoing treatment and have now excellent plants, some of them being 2 feet 6 inches through, with large and bold foliage. The plants are also carrying good heads of bloom, some of them being 18 inches through, the individual flowers averaging from 2 to 3 inches across, and six-eighths of an inch wide in the petals. I have only had occasion to fumigate them once all through the season.—G. PARRANT, *Ashby Lodge Gardens, near Rugby.*

### SCHIZOCODON SOLDANELLOIDES.

FEW exhibits attracted more attention at the meeting of the R.H.S. on March 28th than the beautiful little *Schizocodon soldanelloides*, shown by Captain Torrens, and for which a first-class certificate was awarded. It was brought by the exhibitor from Miganoshta, Japan, in 1891, named at Kew, and stated by the authorities there to have been the first living plant brought to England. It was first shown at the Crystal Palace in the spring of last year, and referred to in the *Journal*



FIG. 55.—SCHIZOCODON SOLDANELLOIDES.

at that period as bearing a resemblance in foliage and flowers to *Shortia galacifolia*. It is a dwarf plant, attaining to a height of 2 to 3 inches only, and bearing its charming rosy flowers very freely. A marked feature of the latter is the deep lacination of the segments which makes the flower look as if fringed. It is a most beautiful little plant, and it is to be hoped that it will seed readily, so that a stock may be procurable. We should be interested to hear whether such is the case or not. The plant has proved quite hardy during the past winter, and it may, therefore, be classed as a valuable addition to the list of choice outdoor plants. Figure 55 represents it.

### SUMMER PRUNING VINES—AN OBJECT LESSON.

HERE we have a subject which will open a wide field for discussion. I am sure readers of the *Journal of Horticulture* will thank Mr. J. C. Clarke (page 223) for his remarks on the matter. Coming as it does at the very commencement of our general Vine-growing season, it may not be out of place to describe my views respecting this question. Undoubtedly, practice combined with thought leads to success, and while, to read the laudatory lines of Mr. Clarke, the general reader might be inclined to think that having once adopted a certain line with success I was content, such is not the case, for I am daily learning.

Coming, however, directly to the main question, I do not like the word "pruning" here, as this may lead to the apparent neglect of my duties; pinching or stopping should be the correct term, it being done in very early stages with the finger and thumb or the scissors. It amounts to pruning I admit, but real pruning in the ordinary sense of the word would be an error on the practitioner's part. A Hamburg Vine affords a good object lesson. Take the ordinary rod of from 10 to 12 feet long. What



do we find? As many laterals as there are feet each side, each lateral with at least six leaves. We stop the lateral at this length, the immediate result being an increase in size of main leaves. Then also follows a quicker growth of the sub-laterals, *i.e.*, leaves or shoots springing from the base of eyes on new wood. Now, without going into details, I may say I preserve every one of these sub-laterals, pinching immediately when ready to one leaf. My contention is that a large leaf is far more value than any amount of small foliage or elongated wild growths.

In a week or ten days the main lateral bud will start again into leaf growth. This new growth I pinch directly I can see the new shoot large enough; and so I repeat during the growing season. I find this amounts to about four growths beyond the first stopping of lateral. Many gardeners will think with me that this is top growth enough. All sub-laterals on main lateral beyond this are kept to the one leaf. In Muscats I generally remove most of these small growths below the fruit on the score of getting more light to the fruit. I treat every lateral as if fruiting. Extreme cases there may be, but I question very much if for general practice this system is to be excelled.

Leaving the top growth for the present, let us turn our thoughts to the roots. At the first stop of lateral, however active the old roots may be as sap providers, no new roots at this date are made; but this check or arrest of sap, if I may call it, at the top is the first cause of new root action. Again, I question if any other plan, *i.e.*, fine foliage would favour root growth so quick. That unchecked top growth will produce in time roots to correspond is true; but who wants roots to any extent 3 or 4 feet long? I am now dealing with the fruiting Vine. Roots of a fibrous character near the surface should be our aim, and this continuous summer pinching will favour the production of these, other conditions being favourable. Even tendrils I strictly keep down, being very sure these are a loss of strength to the Vine. I have spoken of the increase of size in foliage by this system of restriction, but omitted to note the corresponding increase of substance in texture, thick foliage being a very important feature in the well-being of the Vine growth. No amount of reasoning will ever convince me that yards of unchecked growth is ever of benefit to the Vine other than in a case of accident. Thus we may have a touch of sun-burning or scorching, or a visitation of red spider. In such instances it will be desirable to encourage a free growth.

To maintain a continuous summer and autumn growth should be our desire and aim, and heavily cropped Vines will not do this unless we feed and keep them in condition. I shall not expect the consensus of opinion to be on my side, yet even the ordinary reader must by this time suppose I should not go on year by year unless I had proof of the correctness of my practice. By accident, possibly in the busiest time, a house will get left a week beyond its usual time for stopping. Does it gain by so doing? Certainly not; it is quite the reverse, the tale being told all through the remainder of the season.

Were I to tell all I have done in way of experiments in this particular line it would fill a book. But let us revert to another point in this question of restriction. Which practice makes the best wood, and also produces the best eyes for the coming season, which after all should be a true test, even though we have to look a season in advance? I emphatically say the duly summer and autumn-pruned Vines. In conclusion I have not any possible doubt that a wild, or even a semi-restricted growth, especially late in the autumn, also produces a corresponding root growth, which probably decays or dies away during the winter unless in a very warm dry border.

It may now not be out of place if I also note that even the first year of planting I keep Vines well in hand so far as all side growths are concerned, depending on the main rod for root-action, and yet I always get good fruiting canes of good substance, and this is repeated year by year. As Vine growers we should attach more importance to the perfecting of the present year's growth, building up the eyes for something good in the next season. Owing to the lateness of new root-action, if there is not a good show we are to a certain extent powerless to increase the size feed as we will. I question very much if any feeding is beneficial until Grapes are set. In planting Peaches and Vines in March one cannot help being struck with the condition of roots, the former having many new roots, while Hamburgh Vines breaking are dormant so far as these are concerned.—STEPHEN CASTLE, F.R.H.S., *Fordingbridge*.

### SPRING FLOWERS AT HOLLOWAY.

WHETHER or not Upper Holloway gets more than its fair share of sunshine a visit on a spring morning usually finds cheerfulness reigning supreme. Possibly fogs come rolling up from the not far-distant city now and then, but they are gladly forgotten when the dark days of winter pass away. A Journal representative with a weakness for bulbs was struck by the exceptional quality of the Hyacinths and Tulips exhibited by Messrs. B. S. Williams & Son at the Royal Botanic Society's Show a few days ago, and having little time for a close inspection at Regent's Park called in at the Victoria Nurseries with a view to a more leisurely examination of the plants. He had an idea, too, in which he was not disappointed, that there would be other things worth seeing besides the bulbs.

The old order has changed with respect to bulbs during the last five or six years. Time was when almost every leading dealer had a show of Hyacinths in the spring, and a brave display they provided, but now large trade collections are few and far between. Presumably there is a

good reason for the change. Much expense attaches to the purchase of the bulbs and their cultivation, and it may be that the decreased sale price, so far at least as concerns Hyacinths, leaves too small a margin of profit to justify the outlay of a large sum on what is, after all, an advertisement of doubtful value. Many, without doubt, regret the fact, whatever its cause may be.

It is very doubtful if in the many years in which the Upper Holloway firm have grown a collection of bulbs they have ever had a finer display than that of the present season. Both Hyacinths and Tulips are magnificently grown, and many bulb lovers must have noted with pleasure the splendid trusses of the former, and the large, substantial, shapely blooms of the latter. Such Hyacinths as Lord Derby, King of the Blues, Koh-i-Noor, Von Schiller, Charles Dickens, La Française, King of the Blacks, Captain Boyton, and La Grandesse may be instanced as splendid examples, the trusses being large and massive, and the foliage of the dwarf character which adds so greatly to the quality of the plants, but many others might also be mentioned. White Joost Van Vondel, Proserpine, Vermilion Brilliant, Chrysolora, Ophir d'Or, Murillo, and Van der Neer were a few of the most noteworthy Tulips. The wisdom of the Dutch growers in meeting the increasing demand for these splendid flowers by enhancing the prices considerably was questioned in these pages some time ago, and not without reason.

Clivias constitute a useful class of plants for winter and spring flowering, a trifle too robust perhaps in colour to suit some tastes, but none the less acceptable during gloomy weather. We do not see them so widely employed as window plants as might be expected. It is a use to which they are admirably suited. Messrs. Williams & Son grow them somewhat largely, and their plants are now in fine bloom. Aurantiacum; the rich reddish orange Meteor, one of the largest and brightest of all; Model, and Ambrose Verschaffelt with its huge truss, may be noted as four of the most conspicuous.

The Amaryllis have wintered well, and are showing some very fine spikes, a large proportion having two to a plant. The house in which they are grown has a middle bed the length of the structure, with side beds also. The plants are plunged in ashes, which is preferred to fibre; but in the winter, whilst in the resting stage, they are lifted out of the ashes, and stood on the top; then in the middle of January, when repotting takes place, plunging in ashes up to the rims of the pots is the course of procedure adopted. Little water is applied until strong growth commences, the watering process being increased as growth advances; this goes on until they have completed their growth, then the water is gradually withheld until they become quite dry. A few of the best sorts were the following:—Ophelia may be regarded as one of the very finest in the collection; it is a light-coloured flower suffused and shaded with purple, having a narrow crimson margin, flower  $7\frac{1}{2}$  inches in diameter, and of good substance. Harry Williams is one of the very earliest to flower, a bold bloom of a deep crimson colour speckled with white. George Wainwright is a large flower, being 8 inches in diameter, of fine substance and good form. Dazzle is a fine bright scarlet, having a central white stripe. Loveliness is extra fine, very soft salmon in colour. Joseph Broome, deep purplish crimson, is a well shaped flower. Distinction is a large orange-scarlet, base of segments light green. Emperor Frederick is 8 inches in diameter, deep orange scarlet and purplish crimson, very fine. Crimson Banner is a very strong grower, crimson, with a stripe of white down the centre of each segment. Maiden's Blush is a charming variety of fine form and substance, white ground suffused and striped with crimson; one of the best. Lord Salisbury is a fine bold flower, colour crimson purple. Princess Victoria, pure white, is very fine in shape and substance; as a rule it has two spikes with five flowers on each.

The Orchid department contributes a distinct quota of interest. The Vandas, for which the Upper Holloway nursery is so famous, are in splendid health and bearing many flowers. *V. suavis*, *V. tricolor insignis*, and *V. tricolor superba* are all beautiful. Cymbidiums have sent up wonderful spikes of buds, and in a few weeks will be a beautiful sight, and a magnificent piece of *Cattleya Lawrenceana* is full of sheaths. *Laelias* are flowering brightly, *L. harpophylla* and *L. flava* being conspicuous amongst them; so too are *Calanthes*, *Lycastes*, such as *costata* and varieties of *Skinneri*, and *Cattleya Trianae formosa*, a richly coloured form. *Dendrobium Findleyanum* is bearing dense clusters of flowers, and there is another striking representative of the genus in *D. infundibulum giganteum*, a large and beautiful form. *Cypripediums* contribute largely. In the cool houses *Odontoglossum crispum* is represented by many beautiful varieties, the whites being charming to a degree. *O. prionopetalum*, *O. mulus Holfordianum*, and *O. cirrhosum* are also in bloom. The two first-named have much the same colouring, being lemon with brown blotches, but they differ greatly in other respects.

Foliage plants are abundant and healthy. Crotons and *Dracenas* are a special feature. *Aralias*, such as *Veitchi* and *Reginae*, are also in strong force. These add interest to a visit, and all who have an hour or two to spare will spend it wisely if a call at Williams's is decided upon.

### BROCCOLI.

IN the cultivation of this esteemed winter and spring vegetable various circumstances have much to do with the results obtained. It would be utterly useless to attempt to grow Broccoli, even fairly well, on such land as I have to deal with, if it were not dug prior to planting. Plants put out in undug land do not make nearly enough growth to



ensure a crop of even fair sized heads. When strong land has to be dealt with effectively, it must not be allowed to lie long enough to become solid before planting.

Every cultivator has to study the peculiarity of his own soil, and deal with it accordingly. My opinion is that sowing the seed is too long deferred. The plants have not then sufficient time allowed them to grow large enough to give the best results. It is not a question of obtaining extremely large leaves and gross stems by heavy manuring and liquid stimulants, but it is rather the plan of allowing sufficient time for the plants not only to grow to a full size, but to mature before severe frost sets in. In this latter detail lies the chief secret of successful Broccoli cultivation.

Manure is essential, but not to the extent that many persons imagine it is. The land must be made rich enough to produce leaves and stems, but not so gross as to prevent maturation taking place afterwards. We commenced to put our plants out last year on June 1st, being assured then of a long season of steady growth. A second breadth, planted three weeks later, exhibits a marked difference at the present time. The same piece of land has been occupied continuously for the last twelve years with Broccoli and Brussels Sprouts alternately. The land receives an occasional heavy dressing of quicklime. No manure is used that year. We always dig the land during dry weather; the drier it is the better we like it. The year following the liming process as much manure is used as can be covered, but, as very often happens, this is little better than straw and we do not scruple at the quantity. We plant in dry weather, and water the plants once or twice, and have then little trouble from slugs. We never earth-up the plants when growing, nor lay their heads to the north upon the approach of winter.

The following notes will show the varieties and the results after the experience of the winter. Winter Mammoth, planted on the 1st of June, was ready for use six weeks before the appointed time, owing no doubt to the peculiarity of the weather. Leamington has come out of the ordeal remarkably well, out of 750 plants there were only sixty dead from the effects of the frost. Our stock of Late Queen numbers 800, not more than thirty have succumbed to the effects of winter. For trial I put out this year 100 plants of Sutton's Pearl, and only sixteen are dead, so this appears to be a deserving variety for further trial. Vanguard, grown for the first time, suffered considerably by the frost. I omitted to say that we put out the plants direct from the seed bed. I cannot see the advantage of transplanting them previously, but we endeavour to get them into their permanent position before they are at all weakened by overcrowding.—E. M.

### CULTURE OF PLUMS IN POTS.

IN continuation of my remarks on Plums in pots on page 215, I may say that it is better to purchase trees already formed and established in pots than to rear them. If furnished with blossom buds, and given proper treatment, they will bear a crop of excellent fruit the first season. Trees two or three years from the bud or graft are suitable for potting from the open ground, if they have been transplanted the year previously; they will be more or less provided with blossom buds, and, being potted as soon as the leaves fall, a crop of fruit may be had the following year, but the fruit will not be as large and well flavoured as that produced by trees established a year or more in pots.

The pots used must be proportionate in diameter to the size of the trees, 10-inch to 12-inch pots accommodating those of the age mentioned. A suitable compost is three parts rather strong calcareous loam and one part decomposed manure, a 9-inch potful of bonemeal and a quart of soot being added to every 3 bushels of compost. Calcareous loams generally contain enough silicious matter—stones or flints; but strong loams are often deficient both of grit and lime. In that case add a fourth part of sifted old mortar rubbish to the compost; if the loam is fibrous use Thomas' phosphate instead of bone dust. In all cases it is necessary to provide good drainage, potting firmly, and allowing sufficient room in the pots above the soil for the large quantity of water required in summer. This is a great point in Plum culture in pots, for they not only require abundant liquid feeding, but space for surface dressings, so as to get as many feeders as possible. The trees may be placed outdoors in a sheltered situation after potting, and on a bed of rough ashes, surrounding the pots and up to their rims with finer ashes. After a year's growth outdoors they may be placed under glass, but some prefer to pot maiden trees and grow them under glass. I prefer placing the trees outdoors every year after the leaves fall, but all the great authorities on orchard house trees, except Mr. Douglas and the Rev. W. Wilks, prefer to keep them under glass.

The trees in spring—before the buds are so far expanded as to show colour—must be stood apart or be returned to the house, allowing each plenty of room for the development of its growths, and standing each pot on two or more bricks on the flat, a little distance apart, so that the roots will not pass into the soil, whilst insuring a free passage for the drainage water. Such trees are perfectly under control, and they can be moved anywhere at any time without prejudice to the growth.

Success or failure with Plum trees in pots depends greatly on the attention given to watering. They must never be distressed for lack of a supply. In summer they require water twice, sometimes three times a day; also surface dressings of rich compost, pieces of turf preferably, to encourage plenty of surface roots, which can be fed to any extent by liquid manure and sprinklings of artificial occasionally. This is absolutely essential to sustain the trees in health and fertility.

From the time the fruit is set until it begins to ripen each tree should be syringed early in the morning and in the afternoon, except on dull, cold days. Red spider is kept under by those means, and other insects must be subdued by the prompt use of insecticides. When the fruit is gathered the trees, especially the early varieties, may be placed in a sunny position outside, and receive proper attention to watering and syringing, or they may be kept under glass constantly, but there is not the least necessity for it, and glass is worth much in winter for plants that really do require such protection.

If the trees are kept under glass the ventilators should be wide open whenever the temperature is above the freezing point; when frost prevails they should remain closed. In those circumstances the trees will naturally start sooner in spring than those that have been placed outside, and from this time forward a circulation of air, except in severe weather, should always be maintained by leaving the ventilators open more or less day and night. Plenty of air and a dry atmosphere is the way to secure a proper set of fruit. By the time the fruits are set and swelling the sun will have considerable power, and may be taken advantage of to accelerate the growth by reducing the ventilation in the afternoon, yet leaving some on, airing early each fine morning, and when the wind is cold and sharp ventilate on the opposite side to that on which the wind blows. In summer the ventilators should be left open day and night, but some wire netting must be tacked over the ventilators so as to exclude birds.

The fruit must be kept dry when it is ripening and as long as it remains on the trees afterwards. Wasps and bluebottle flies like ripe Plums. Hexagon netting over the ventilators and frame doors covered with it exclude them, otherwise use the thinnest muslin over the trees or enclose the fruits in bags of that material. After the fruit is removed recourse must be had to syringing, watering, and proper supplies of nourishment for the perfecting of the wood and buds for next year's crop. Repotting or top-dressing should be done before the leaves fall.

As to the training of the trees, bush and pyramid forms are best, a tree of the latter being easily formed by pinching the side shoots, and topping the leader to secure them. Summer pinching may be practised twice or even thrice on the leader, and the side shoots once or twice to four or six leaves, the growths on these and branches being stopped at three leaves, taking care to avoid overcrowding, otherwise the fruits are deteriorated for lack of light and air. Pruning may be performed early in spring, and will mainly need to be confined to thinning, and removing exhausted and superfluous shoots.

Plum trees in pots are fine for table decoration when laden with showy luscious fruits. Those with red fruit tell best, a pyramid about three years old in a 9 or 10-inch pot, and carrying five dozen of fruits, are singularly effective, one of the best being Czar, its bluish hue rendering the fruit very attractive. Yellow Plums are very beautiful.—G. ABBEY.

### CARNATION NOTES.

#### BORDER VARIETIES.

THE three varieties recommended below are worth growing extensively; in fact, they look best when whole beds are planted with them. Marquis of Lorne is a good dark flower that seldom splits its calyx, and the same may be said of the other two. This variety is the tallest of the three, and is a very good grower. Queen of Bedders may be described as a good red Carnation, and of dwarf sturdy growth, very free, large flower; the flower stems seldom exceed 18 inches in height. This variety forms a charming bed, and should be grown in quantity to display its beauty. Hotspur is a grand companion to the above, being pink in colour and practically of the same habit of growth. These two kinds were selected from amongst many others at Messrs. Turner's nurseries, Slough, and they have fully borne out the high opinion we then formed of them. For cold, late, and rather damp localities these three kinds may be relied upon to do well.

#### GOOD CARNATIONS FOR POT CULTURE.

Mrs. Reynolds Hole and Miss Mary Morris are excellent varieties for growing under glass. The former, although it possesses no scent, is a most popular variety amongst ladies, its salmon apricot colour being very striking. It does well in pots, and will if occasion requires bear gentle forcing. When grown under glass the plants naturally flower before those outside; the flowers produced under glass are even more delicate and striking in colour.

Miss Mary Morris when grown under glass is so delicate in colour that one can scarcely recognise it. The flower is large, and being so delicate it forms a good companion to the more striking Mrs. Reynolds Hole. To grow these varieties well in pots strong healthy layers should be selected from plants that have been layered outside. They can be placed singly into 4-inch pots, or three may be put into 5-inch pots. These should occupy cold frames until the end of the year, and then be placed in the greenhouse. When well rooted they can be placed into 6 and 8-inch pots respectively. This course should be followed when the plants are to be brought forward into bloom as early as possible; but when they are to flower under almost natural conditions they ought to be kept in frames, or even stood outside on beds of ashes, and only removed under glass to flower.

The old Crimson Clove is much more beautiful when grown in pots under glass than when flowered outside. This variety, on account of



its fragrance, is highly appreciated, and well deserves culture under glass. The plants need the same treatment that has been advised above.

#### SOUVENIR DE LA MALMAISON CARNATIONS.

The healthiest specimens and best blooms are produced when the plants are grown perfectly cool throughout. Plants that have flowered with one spike in 6-inch pots under cool treatment make from three to six strong growths, and flower the second season. The plants after flowering should be stood outside on beds of ashes, and carefully watered. At this season these plants may be placed into 8 or 9-inch pots, according to their size and the number of roots they possess. After potting these plants will do much better plunged in frames than in an ordinary greenhouse. The growths should be carefully staked to prevent them breaking. When well grown Lady Middleton produces a very large flower, and is even more highly appreciated than the ordinary form, although it is indispensable where these Carnations are appreciated. The scarlet form (Madame Arthur Warocqué) flowers freely, and is a great acquisition, but is of rather weak growth compared with the other varieties of Malmaison, and appears to be very shy of producing grass for stock.

These plants do well in two parts good fibry loam, the other part being composed of leaf mould and coarse sand; to this one-seventh of decayed manure should be added, but this should be passed through a fine sieve.—O. M.



#### HARDY FRUIT GARDEN.

**Grafting Apples and Pears.**—Grafting may still be proceeded with, especially with late varieties and in cold backward districts. In some parts of the country it can be performed successfully as late as April 25th, but as a rule the early part of the month must be considered the best period in midland districts, March answering better for southern localities. Much, however, depends on the season, which in a great measure accelerates or retards the activity of the sap. Free sap movement in the stocks to be worked is the first essential to success, that in the scions being comparatively quiescent at the time of insertion. The latter being procured and stored in a moist cool spot some time previously will be in the right condition.

**Preparing Stocks and Scions.**—Stocks of considerable diameter which it is intended to work, having been prepared by heading down some time ago, will only now need the removal of a thin layer of the upper surface in order to present clean fresh wood and bark to the operator. The scions should be healthy portions of the previous year's wood about 6 inches long, containing at least four bold wood buds. The central parts of shoots are regarded as the most suitable. The immature tips can thus be discarded as well as the basal portions of shoots, which do not generally contain wood buds of the right character. In preparing the scions for insertion, after cutting them to the proper length, cut the lower half in a sloping direction, beginning in front of the lowest bud and, making a clean cut downwards, taper off to a wedge-shaped point. Form a notch or small shoulder at the top of the slanting cut, so that when inserted in the stock each scion will rest firmly in position.

**Form of Grafting.**—There are various modes of grafting employed. The method for young stocks, where stock and scion are of equal thickness, is that known as whip grafting. The details in the preceding paragraph refer to crown or rind grafting, which is the method usually employed when grafts are inserted on old trees, as several scions can be introduced on one branch or stock.

**Inserting the Scions.**—For crown grafting, as each scion is prepared lose no time in slitting the bark of the stock to the required length and lift the bark, which will easily separate from the alburnum, with a piece of wedge-shaped ivory, or other smooth, hard substance. As this is done slide in the scion until the notch or shoulder rests upon the face of the stock. Take care that the inner barks unite perfectly, without which a union cannot take place.

**Securing the Grafts.**—Promptly tie with matting, and cover with grafting wax. A mixture of two parts clay to one of cow or horse manure answers well, but wax is the best. Clay and manure mixtures are liable to crack and fall away, to avoid which moss is sometimes tied over and kept moist.

**Pruning Outdoor Figs.**—Trees against walls which have received protection, and have had it gradually removed, may now be pruned. Shorten back to one eye the shoots which bore fruit last year, and which were partially shortened in the autumn. Reserve last season's shoots full length, for towards the extremities of these the crop of fruit for the forthcoming season will be found. Remove crowded wood entirely. In some positions pruning may be practically dispensed with, as when the trees make little else but short-jointed fruitful wood they are better left alone.

**Treatment of Newly Planted Fruit Trees.**—See that all recently planted fruit trees are securely staked to prevent swaying. In dry weather on light soils watering may be necessary. After one

good application of it apply a mulching of short manure over the roots. In cold wet weather and on heavy soil the trees will be better without any mulching until hotter weather sets in, the object being to allow the sun and air to warm and aerate the surface, which during this period should be kept open and loose with the hoe.

**Applying Sewage.**—Where valuable liquid drainings of all kinds are carefully preserved for use in the garden the present is a fitting time to empty the tanks or receptacles containing such. Large old fruit trees and bushes—Currants, Gooseberries, and Raspberries—are improved by its use if discretion is exercised in applying it. It is not well to use it too strong. Better give a second application than one strong dose only. Dilute with 4 to 6 gallons of water. Urine diluted with six times its quantity of water or soapsuds is a useful stimulant. The drainings from manure heaps and stables ought to be utilised. Strawberry plants revel in good support applied to the roots just when new fibres are becoming active and claiming nutriment.

**Applying Artificial Manures.**—The present is a good time also to apply artificial or chemical manures to trees and bushes that need assistance. For Strawberries on light soils a nitrogenous manure is helpful. One of the best is nitrate of soda applied in a finely divided state, mixing it with fine dry soil for equal distribution at the rate of 1 oz. to the square yard. This manure alone or mixed with double the quantity of superphosphate of lime will give increased vigour to Strawberries. It should not be allowed to touch the young foliage, but be carefully spread among the plants. Superphosphate may be applied to fruit trees at the rate of 4 ozs. to the square yard, spreading it on the soil around the stems as far outwards as the roots extend, which will be equal to the extent of the branches. Sulphate of ammonia has a similar though not such a rapid effect as nitrate of soda. Use it at the same rate—namely, 1 oz. to the square yard, but it is better mixed with double its own bulk of mineral phosphate and half the quantity of potash, this forming a suitable mixture which may be given to Strawberries growing in heavy cold soils or fruit trees generally in similar soil. The advertised artificial manures also produce excellent results when used in accordance with the directions.

#### FRUIT FORCING.

**Peaches and Nectarines.**—*Earliest House.*—When the stoning is completed and fruit desired ripe as soon as possible, the temperature may be maintained at 70° to 75° by artificial means, falling 5° through the night, keeping through the day from sun heat at 80° to 85°, with top ventilation at 75° and front at 80°, so as to insure a circulation of air. Close the house at 80°, and sufficiently early to allow of an advance to 85° or 90°, the trees being well syringed and a good atmospheric moisture secured, which will insure the fruit swelling to a large size. The foliage and fruit must, however, become fairly dry before night, and clear rain water be used, as spring water sometimes contains mineral matter, leaving a deposit on the fruit, which is a great blemish. Remove the leaves over or in front of the fruit, and turn it up to the light by thin laths placed across the trellis, as it greatly adds to the appearance of the fruit when it is well and evenly coloured from the apex, and secures the highest flavour. Cease syringing the trees when the fruit commences ripening, but maintain a genial condition of the atmosphere for the benefit of the foliage by damping available surfaces twice a day. Only the earliest varieties, as Alexander, Waterloo, and Early Louise Peaches, with Advance Nectarine, will be in the condition described, and they are best grown in a house or compartment by themselves.

Midseason Peaches and Nectarines, as Royal George and Stirling Castle Peaches, with Lord Napier Nectarine, must not be subjected to higher temperature than 60° to 65° at night, 70° to 75° by day with gleams of sun, and 5° to 10° more on bright days until the stoning is completed. These trees must be well syringed and every part kept perfectly free from red spider by washing them twice a day with clear soft water through a syringe. Supply weak tepid liquid manure to the roots if needed, otherwise keep well watered, aided by light mulching, for deficiency of moisture at the roots causes the fruit to ripen prematurely and have little or no flavour. Stop or remove all gross shoots before they have drawn the supplies of sap from the weakest parts of the trees. Leading shoots may be allowed to extend over uncovered parts of the trellis, pinching the laterals to one leaf as produced, and taking out the points of shoots intended for next year's bearing at 12 to 15 inches if likely to interfere with other growths or much exceed that length. Turn any leaves aside that shade the fruit or otherwise interfere with the colouring process.

**Houses Started at the New Year.**—Where disbudding and heeling-in the shoots have been attended to the trees will not be encumbered with more growths than are necessary for the perfection of the current crop and providing for the succeeding, every growth being allowed full exposure to light, as it is a mistake to permit more growths to remain than are necessary for next year's crop or for the extension of the trees. Allow plenty of room in the ties, not tying closely down for some time longer. Stop or remove gross growths, equalising the vigour through the branches of each tree by distributing the shoots regularly. Shoots pinched at three or four joints of growth to serve the double purpose of attracting the sap to the fruit and prevent its being drawn away should only be allowed moderate extension, stopping each sub-lateral to one leaf. Enough shoots should be permitted as will shade and protect the strong wood from the direct rays of the sun as the season advances. Ventilate freely but carefully, avoiding cold currents of air and sudden depressions of temperature. Thin the fruits if still too thick, or those left on the trees will not only attain a larger size, but with the trees in good health it is more likely to stone well than when they are over-burdened. Inside borders must be watered as required;



excessive watering and feeding induces growth at the expense of the fruit stoning, therefore be guided by the condition of the trees and crops.

**Houses Started in February.**—Trees that were set to work early in that month will have been disbudded, and the growths retained heeled-in. Those started later in the month should be examined frequently for disbudding, commencing with the forwardest and strongest parts of the trees, being careful to preserve a shoot at the base of the current year's bearing branches, and to leave no more shoots on the extensions than will be required for furnishing the trees with bearing shoots at 15 to 18 inches distance apart along the main and subsidiary branches, and all the others on extensions may be pinched to form spurs. A shoot on a level with or above the fruit must be retained on each bearing shoot, and be pinched at the third joint. As the fruit swells freely remove those worst placed, and leave only a few more than will be required for the crop. Syringe on fine mornings and in the afternoon. Commence ventilating early, increase it with the sun heat, and close so as to secure a slight rise of temperature.

**Houses Started in March.**—The trees that were started early in last month are out of bloom, and should be syringed occasionally to assist the fruits to cast off the remains of the flowers; and on fine days they may be moderately syringed in the morning and afternoon, but excessive washings are not desirable, as they only induce growth and weakness. Secure sturdy growth by free ventilation on all favourable occasions. Proceed with disbudding gradually, a little and often, and observe the same in thinning the fruit, rubbing off those that are small and badly placed as soon as the most promising can be selected. If there is any trace of aphides promptly apply an insecticide, or fumigate the house on two or three consecutive evenings moderately, taking care to have the foliage dry, deliver the smoke cool, and not give an overdose.

**Late Houses.**—All that is necessary is to prevent injury to the blossom from frost or damp. When the days are bright free ventilation will be all that is needed, with sufficient warmth in the pipes at night to exclude frost, but when the days are raw, dull, and wet it is desirable to turn the heat on in the morning so as to raise the temperature to 50°, and keep it at that with a free circulation of air, turning off the heat early in the afternoon so as to allow the pipes to cool before night and the temperature falling to its right minimum of 40° to 45°, which is quite safe, and ought to be secured after the blossoms expand, with a little air to prevent the deposition of moisture on the flowers through the night. The trees should be shaken to assist fertilisation, and artificial impregnation may be resorted to by dusting the flowers with Pampas plume, a rabbit's tail mounted on a stick, or camel's hair brush.

**Figs.**—**Earliest Forced Trees in Pots.**—The very early varieties, St. John, Early Violet, and Angelique require free ventilation and full exposure to the sun, the fruit being now ripe or ripening. These varieties are useful for supplying early fruit, but they have not the quality of White Marseilles and Brown Turkey, which, now showing signs of ripening, should have the ventilation increased and be exposed to the sun as much as possible. All cannot have this, but judicious stopping, thinning, and tying the growths will help them. The temperature should be 60° to 65° at night with a little air, 70° to 75° by day artificially, and 80° to 85° with sun. Top ventilation should be given at 70°, increased at 80°, and a good moisture maintained whilst the fruit is swelling, but syringing the trees must cease when ripening commences, and a circulation of warm rather dry air secured constantly, for fruits ripened in a close moist house are insipid. Where syringing has been practised red spider makes little progress, but when atmospheric moisture is reduced it spreads rapidly, therefore no effort should be spared to keep the foliage quite clean up to the ripening time. Supplies of water are needed at the roots at all stages, and the trees may be syringed at times during the ripening season by gathering all the fruit ripe at one time. For private use Figs should be thoroughly ripe when gathered, but for marketing purposes or packing they may be gathered before they are fully ripe. Brown scale also increases rapidly over the young shoots and extends to the leaves and fruit. It must be kept under by the timely use of an insecticide, carefully applying it with a brush or sponge upon the first appearance of the pest. Red spider may be treated similarly, the thing is to contest insect invasions before they become firmly seated on the plants.

**Succession Houses.**—Trees permanently planted out in borders require water and liquid nourishment in proportion to the vigour of the trees, their crops, and the rooting area. With the roots restricted to a narrow border large quantities of water or liquid manure will be required; those having the run of a large border will need less, but large trees and borders are great mistakes in Fig culture. Syringe the trees twice a day when fine. Let the night temperature range from 55° to 60°, 70° to 75° by day with gleams of sun, and 80° from sun heat, ventilating from 70° and fully at 75°, but with an advancing temperature to 80° or 85°, closing at 80°, and sufficiently early to cause the temperature to rise 5° or 10°. Keep the growths regulated, thinned, and stopped, avoiding overcrowding as the greatest evil in Fig culture.

**Late Houses.**—Trees in these and wall cases must now be tied in and syringed on fine days, but sufficiently early to allow the trees becoming dry before night. Fire heat need only be employed to exclude frost where the fruit is required late. Trees in unheated houses should be retarded as much as possible by free ventilation in the daytime and in mild weather, and the house kept dry at night, syringing not being practised over the trees in the early stages of their growth. Cold houses, however, are not the best to insure success, though the trees afford one crop annually as a rule, yet in cold localities there should be some provision for keeping out frost in the spring and ripening the wood in

the autumn. In winter the trees are quite safe tied in bundles and protected with dry straw or bracken, with dryness at and a mulch over the roots.

#### THE FLOWER GARDEN.

**Carnations and Picotees.**—Once more young plants have proved much the hardiest. Stems of old plants not being protected by leaves are most susceptible of injury, and not a few beds of them are scarcely worth preserving. If there are any young plants in pots under glass, and intended for the open borders, these should be hardened off and planted out before they commence to produce their flower stems. They will be useful for filling up gaps, or may be planted in slightly raised beds, 6 feet or rather less in width, planting them about 1 foot apart each way. If they cannot have the benefit of quite fresh loamy compost, they ought at least to be surrounded with a mixture of fresh loam, old Mushroom bed manure, or better still, horse droppings swept up from the roads and grit of some kind. The soil should be well rammed about the balls of old soil and roots with the handle of the trowel. Lightly hoe among established plants, and mulch with leaf soil or old Mushroom bed manure.

**Carnations and Picotees from Seed.**—The Marguerite Carnations will flower strongly the same season they are raised, providing the seed is sown moderately early. In order to be certain of their flowering in August or September, the seed ought to be sown in gentle heat in March, but if seeds are at once sown the plants would yet flower if protected or lifted and placed under glass. The seed germinates in about a week or nine days, and as surely as Aster seed. When well into rough leaf prick the seedlings out 3 inches apart each way in boxes or pans of good loamy soil, or else place them singly into 3-inch pots. Keep them in gentle heat till they are rooting afresh, after which cold frames or pits are the best positions for them till they are strong enough for planting in the open. Seedlings of the ordinary border Carnations and Picotees flower grandly during the following season, but are rarely of much service afterwards. The stock must, therefore, be kept up by means of layering and raising of seedlings every spring. Sow the seed thinly in either pans or boxes of fine soil previously well moistened, and place in very gentle heat—a newly started vinery answering well—to germinate. Much fire heat is objectionable, a cold frame being preferable to strong heat for raising seedling Carnations.

**Half-hardy Annuals.**—If seed of Asters, Stocks, Zinnias, Dianthus, Phlox Drummondii, Godetias, miniature Sunflowers, Perilla, and such like are sown now the plants will be in excellent condition for the open beds or borders late in May or early in June. Sow rather thinly in boxes or pans, and place in gentle heat. If squares of glass are available cover with these, shade heavily from bright sunshine, and see that the soil never becomes dust dry. When the seedlings are well up gradually expose to the light. Soon after the first rough leaves have formed prick the seedlings either in other boxes and pans, or on shallow beds in frames and pits. Given the benefit of good loamy soil, and a little warmth and shade, all will soon start growing strongly. Variegated Maize (*Zea japonica*) and Ricinuses may also be sown now.

**Hardy Annuals.**—There are a considerable number of beautiful kinds and varieties that may be raised in the open borders where they are to flower. These comprise Alyssum, Bartonias, Calandrinia, Calendula, Candytuft, Cornflower, Chrysanthemums, Coreopsis, Eschscholtzia, Gilia, Godetia, Gypsophila, Hawkweed, Helichrysum, Hibiscus, Larkspur, Leptosiphon, Limnanthes, Linaria, Linum, Love-Lies-Bleeding, Lupine, Malope, Mignonette, Nemophila, Oenothera, Sanvitalia, Saponaria, Silene, Sweet Sultan, Sweet Peas, Tropæolum, Venus' Looking-Glass, Viscaria, and Xeranthemum. Supposing the ground has been laid up roughly during the winter or for the past month, a showery time during the early part of April should be taken advantage of for fining this down and sowing the seed. The usual practice is to sow all in circular patches a foot or rather less across, and it is a good plan to form these slightly below the surface, covering with a little rich finely sifted soil. Avoid crowding of either the patches or seed, annuals to be seen at their best requiring good room. A close look-out must be kept for slugs, trapping these either with Broccoli leaves, or better still heaps of bran or brewer's grains.

**Ornamental Grasses.**—These may be treated exactly as advised in the case of other hardy and half-hardy annuals, but merit a separate reference. If required principally for drying, and they are very serviceable in that state during the winter, they ought really to be grown in a kitchen garden border where there will be nothing to prevent cutting the flower heads directly they are fit. They vary greatly in height, but if sown thinly in lines 12 inches apart across a border, no mistake will be made.

**Poppies.**—Those that are annuals are among the gayest of summer flowering plants, and there are many beautiful single and double flowering varieties, the Japanese section of the latter being not unlike good Japanese Chrysanthemums, but their beauty generally is of a fleeting character. If sown in patches in mixed borders they are not so much missed in the late summer and early autumn, but they are very gorgeous in masses. No time should be lost in sowing the seed, not forgetting a good breadth of the charming Shirley Poppies. Avoid sowing thickly, and thin out the seedlings freely.

#### TRADE CATALOGUES RECEIVED.

Dammann & Co., Naples, Italy.—*Miscellaneous Plants.*

E. D. Shuttleworth & Co., Albert Nurseries, Peckham Rye, S.E.—*Trade List of Miscellaneous Plants.*

Wrinch & Sons, St. Lawrence Works, Ipswich.—*Garden Implements, Garden Furniture, &c.*



# THE BEE-KEEPER.

## APIARIAN NOTES.

### CYPRIAN BEES.

AT Craighet there is a hive of Cyprian bees apparently pure, that "A Renfrewshire Bee-keeper" imported about six years ago. Within several miles of Craighet there is an extensive bee-keeper who manages his bees on the two queens in one hive system and the joining of swarms—swarming them artificially, a proof in itself if there were no other, that the two queens in one hive plan is not a new idea. It is now some ten years since this gentleman took the bees in hand, I believe encouraged by the late "Renfrewshire Bee-keeper," from whom, no doubt, the profitable methods of management were conveyed, and so pleased is he with the results that he is on the eve of extending his apiary. By his good management he scores a large profit, and attends to his business regularly in Greenock.

The farmers in the neighbourhood complain that they have no honey as the bees above alluded to take all there is. This is certainly not the case, as there are only hundreds of hives where thousands might be profitably kept. The cause of the farmers' failure is due to keeping too small hives and the bad seasons combined. Instead of grumbling at the failure of the honey yield, they should adopt the system so successfully carried out by their supposed rival, and do as he does, keep stronger hives, and manage them properly.

### MR. BENTON AND PUNIC BEES.

Bee-keeping is like many other rural pursuits, most profitable in the hands of experts. I do not mean certificated ones, but men or women who can trace cause and effect, working out their own programme and ideas, and leaving the teachings of the facile writer but inexperienced bee-keeper outside his daily care. Nor is that all. Bee-journalism and dealerism, with petty jealousy and ill-feeling, have done much to hinder real progress. The editor of one American bee paper charges Mr. A. J. Root, the editor of "Gleanings," as being unfair in suppressing one side of the question on Punic bees, which Mr. Root denies, and then puts a stop to the controversy, quoting Benton, Baldensperger, and Cowan in support of his views. The first named gentleman, when making money by the sale of these and other foreign bees, praised them highly. They had no bad qualities in his opinion then. In a letter to me before quitting Austria he gave the Tunisian bees a very high character, particularly that of making extra white comb. I answered him, but neither obtained bees nor reply. It is not that that troubles me; but the reason that his statements are irreconcilable. At the Washington Convention he stated "That the temper of the Punics was ten times as bad as that of the Cyprians." I never found the Cyprians very spiteful, and the Punics seem even milder in temper; but they must be approached in a sensible way. The other persons named have not, in my opinion, had sufficient practical experience with these bees. I append a letter from Ireland:—

### HIVES AND FEEDING.

I herein note down a few observations I have made during the past two weeks. My bees have worked well since the 14th of March. On Monday the 20th we had an ideal day for bees, and it was very pleasant indeed to hear the bees and to see how busy they were. The thermometer was standing at 60°, the warmest we have had this year. I was very anxious to know how they all stood for stores. I examined all my ten hives, eight of which are Blantyre's, and found all, as near as I can estimate, fully 20 lbs. of sealed stores. Every hive is, in my opinion, a model of what a hive should be at this date. I have never extracted any honey from the brood combs of my hives; in fact, I have not procured an extractor yet. As I want the greatest possible amount of well-finished sections I have not given any sugar to any of my stocks since September, as all my observations have taught me that to use it profitably it should be given while the bees can seal it thoroughly before the wintry nights come on us.

I had a little experience with spring feeding two years ago. Although I used every precaution, and fed two hives that were neglected to be fed in time in the autumn, I failed to get them ready as soon as the bees that had not tasted a drop of syrup all through the spring. I had to feed all my bees in May two years ago. Through your advice in the *Journal of Horticulture* that was done profitably, for when the weather took up fine in June I had a good return in honey, which I attributed to keeping my queens laying, and preventing the destruction of brood and eggs. This is the first winter I have seen my bees pass through without seeing a speck of voided excrement on any of my hives. The winter came on so early, and the Ivy was so late in coming into flower that my bees never had a taste of it; other years I have seen them gather a good deal of both honey and pollen from it when we get the Ivy fully open about the last week of October and first week

of November, with a few fine days and frosty nights. Bees require a little management, as I find if I do not have all thoroughly porous on top and regulate the entrance the hives become completely logged with wet. If this is not at once remedied such a hive is at once on the down grade. The ventilating floor that you so strongly recommend is to me indispensable, and no hive can be perfect without it.

### PUNICS IN IRELAND.

I was induced through all that was written for and against Punics to give them a trial, and obtained one pure mated queen and four virgins; but one of the latter was lost in mating. I have also one Carniolan from Messrs. Neighbour. They look to me somewhat like the Ligurians I had and discarded. They are behind all the Punics as workers. Three of the Punics are extraordinary hives. To see how these bees work is simply a pleasure that none but those who have never seen could enjoy. The pure stock, I think, is leading by a little. I have on three occasions since the 20th ult. noticed these bees at the entrance fanning in air as late 8 P.M., with the thermometer at 45°. Although a strong heavy hum in all the others, none of them had a single bee within sight at the entrance now (1½ inch wide). If these Punics do not develop some bad feature during the coming season I will have none other.—PETER BLOCK.

The foregoing notes impart nothing but truth. The writer has the good of his neighbours as well as his own at heart, and having experience with different varieties of bees in this country his evidence is consequently of more substantial value.—A LANARKSHIRE BEE-KEEPER.



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Cutting Down Holly Hedge (E. C.).**—The hedge may be cut down now, and when fresh buds commence pushing saturating the ground with clear water, then following with liquid manure, would greatly tend to promote free healthy growth.

**Planting Gladioli (S., York).**—Certainly Gladioli may be grown as "far north" as where you reside, and are, in fact, splendidly grown a great deal further north—in Scotland. They are grown as well in the north as the south, if not better. The time for planting should be governed by the weather and the consideration of the soil, not by the almanack. We have planted in February in light soil in a free dry state, and in April in strong land with equal satisfaction. Any time from the middle of March to the middle of April is suitable, always taking advantage of favourable weather when the land is dry on the surface.

**Rhubarb from Seed (M. C.).**—Plants can be raised from seed quite easily by sowing in the open ground during fine weather in April. It is a good plan to sow in drills a foot apart, placing a few seeds at intervals of a foot, then when the plants appear thin them out as may be needed, allowing one to remain. These plants grow to a good size the first year, and an idea can be formed as to which are likely to be the best, there being usually considerable variation, and the worst can be removed. The others can either remain for affording produce the following year, or be taken up and planted at wider intervals for forming a permanent bed.

**Cannas and Hedychiums (Subscriber).**—The plants require practically the same treatment in pots—that is, substantial turfy loam with an admixture of wood ashes and crushed bones; a light position in a warm greenhouse having a genial atmosphere; adequate root moisture, the supplies to be increased with increasing growth, affording clear liquid manure when the pots are filled with roots, when it is not easy to give too much water; cleanliness of foliage by occasional syringings, reducing the water supply in the autumn, and keeping the soil dry in the winter. Plants in small pots should be transferred to larger before the roots are closely matted. Cannas flower well in from 7 to 9-inch pots; Hedychiums as a rule requiring a little more rooting space. The soil must be firm.

**Border under Trees (A. G.).**—Nothing succeeds so well as a bordering to walks or for covering the ground under trees as Ivy. The common or Irish Ivy is extensively employed for edgings in some of the London parks and gardens, and neatly cut once a year in late spring, a



fresh and good appearance is maintained. The soil should be dug and enriched if needed before planting, and the better it is the more quickly the Ivy will grow. In choosing plants take care they have good roots, long trailing Ivy plants with few roots seldom growing well, and many die. The growths may be pegged down to form a border of any required width, and can easily be kept within bounds with the shears. Hollies grow well under trees, especially the broad-leaved Hodgins or Shepherd's, Ilex Hodginsi and I. Shepherdi, when the soil is suitable. So do Rhododendrons and Aucuba japonica, though they do not succeed in all districts. The Evergreen Privet, Ligustrum japonicum, grows well under trees in any ordinary fertile soil. Plant any of those mentioned that grow well in open positions in your garden. The present is a good time for planting them, also Ivy.

**Violets in Frames (Young Gardener).**—The method which you have been instructed to adopt of "planting single runners of Violets in cold pits in October" is not the best for affording a good supply of blooms in winter. We have seen stout runners with good crowns inserted an inch or two apart in boxes of light soil kept moist in a warm light house afford blooms plentifully in a few weeks, but no such results could follow in a cold pit. Only failure could be expected by the plan you describe, but as you acted "under orders," obviously the fault does not rest with yourself. Rooted offsets should be planted in good soil in the open air in April, the runners suppressed, red spider subdued, and strong plants with bold crowns will be produced by autumn for establishing in pits or frames before winter for flowering during the dull months of the year, the supply largely depending on the weather when no heat from fermenting materials or otherwise is afforded. A hundred times more flowers will be produced by this method than by the one you have been instructed to carry out.

**Lapageria Unhealthy (M. C. D.).**—There are two main reasons why these plants are often in an unsatisfactory state in pots:—1, Close, soil not sufficiently drained, and hence sour. 2, Pots so densely crowded with roots that the plants do not receive adequate support. Lapagerias usually grow best planted out in a bed at least 18 inches deep, the bottom 6 inches being of drainage, broken clinkers and charcoal being excellent, the remainder springy turfy peat and loam, twice the quantity of the former, with a liberal admixture of charcoal, the whole to be pressed down as firmly as the turfy nature of the compost permits. A bed thus prepared can scarcely be made sour, due provision being made for the free exit of water from the drainage, and when the soil is permeated with roots it is not easy to give too much water; until then water must be given more sparingly, yet the soil should never become at all dry. If you prefer growing the plant in a pot, prepare the soil similarly. In the event of your plant not having rooted freely, it will be advisable to remove a good part of the old soil, which will be sour, and give fresh as suggested, thinning out and shortening wiry growths to the best buds you can find, syringing the plant twice or thrice a day according to the weather, to prevent excessive evaporation from the leaves, and so assist the emission of fresh healthy roots, which alone can invigorate the plants. We know of Lapagerias that grow luxuriantly and flower profusely on the north side of greenhouses.

**Transplanting Asparagus (J. G.).**—If the ground is well stirred, as you propose, to a depth of 2 feet or 2 feet 6 inches, and ten cartloads of manure are added and well incorporated with the soil, care being taken to keep the good soil on the top, not burying it at the bottom of the trenches nor bringing much, if any, of the poor soil to the surface, it ought, if of a friable nature, to grow good Asparagus. It is well not to move the plants until they are beginning to grow, and if the shoots have pushed a few inches it will be an advantage rather than otherwise. Lift them carefully, preserving all the live roots possible. As the plants are ten to twelve years old they will probably have a number of decayed roots. It is not necessary to lift or preserve any except the live crowns with their shoots and buds and all the live roots attached. Stretch a line where you wish the rows to be, and take out a trench on both sides with a spade, sloping outwards from the line about 9 inches wide and 6 inches deep at the extremities; this will give a ridge which should be knocked down where the plants are to be, so as to form a seat, and so deep that the top of the crown will be level with the top of the ridge. Dispose the roots evenly in the sloping cuts on both sides of the ridge, and cover them with some fine rich soil. Cover with the soil taken out, and place it over the crown to the depth of 2 or 3 inches. Mulch between the rows and over the crowns with a couple of inches of lumpy manure, the remains of spent Mushroom beds, or partially decayed leaf soil. After the plants are in free growth liquid manure may be given between the rows, and continued at weekly or fortnightly intervals up to early September. The first growths will perhaps be comparatively poor, being crippled by the transplanting and consequent disturbance and loss of roots; but after the plants become established they push a strong second growth, and to throw the full vigour of the plants into them the first growths should be cut away when the second are well advanced above ground or beginning to "feather;" and a reservation should be made of two or three of the strongest about midsummer, the other being cut away. If the plants are large more shoots may be left, but crowding is a great evil, and one of the chief reasons why the "produce" is so small as to please nobody. With attention to these matters, and to staking if necessary to prevent damage from winds, there is no reason why the plants should not succeed and afford good heads for cutting next spring.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers.

Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. H.).—Cotoneaster Simonsi. (G. Mc.).—1, Sedum carneum variegatum; 2, Doodia media; 3, Polypodium pustulatum; 4, Asplenium palmatum; 5, Adiantum capillus-Veneris; 6, Doodia caudata.

#### COVENT GARDEN MARKET.—APRIL 5TH. MARKET very dull during the holidays.

FRUIT.							
	s.	d.	s. d.		s.	d.	s. d.
Apples, half sieve .. ..	1	0	to 3 6	Lemons, case .. ..	10	0	to 15 0
„ Nova Scotia, per barrel .. ..	12	0	17 0	Oranges, per 100 .. ..	4	0	9 0
Grapes, per lb. .. ..	1	6	4 0	St. Michael Pines, each ..	3	0	6 0
„ (new) per lb. .. ..	4	0	5 0	Strawberries, per lb. ..	3	0	5 0

VEGETABLES.							
	s.	d.	s. d.		s.	d.	s. d.
Beans, Kidney, per lb. ..	0	6	to 1 0	Mustard and Cress, punnet	0	2	to 0 6
Beet, Red, dozen .. ..	1	0	0 0	Onions, bunch .. ..	0	3	0 5
Carrots, bunch .. ..	0	4	0 0	Parsley, dozen bunches ..	2	0	3 0
Cauliflowers, dozen .. ..	2	0	3 0	Parsnips, dozen .. ..	1	0	0 0
Celery, bundle .. ..	1	0	1 3	Potatoes, per cwt. .. ..	2	0	5 0
Coleworts, dozen bunches	2	0	4 0	Salsify, bundle .. ..	1	0	1 6
Cucumbers, dozen .. ..	2	6	4 0	Scorzonera, bundle .. ..	1	6	0 0
Endive, dozen .. ..	1	3	1 6	Seakale, per basket .. ..	1	3	1 6
Herbs, bunch .. ..	0	3	0 0	Shallots, per lb. .. ..	0	3	0 0
Leeks, bunch .. ..	0	2	0 0	Spinach, bushel .. ..	3	0	3 6
Lettuce, dozen .. ..	0	9	1 0	Tomatoes, per lb. .. ..	0	6	1 0
Mushrooms, punnet .. ..	0	9	1 0	Turnips, bunch .. ..	0	3	0 4

#### AVERAGE WHOLESALE PRICES.—OUT FLOWERS. Orchid Blooms in variety.

	s.	d.	s. d.		s.	d.	s. d.
Arum Lilies, 12 blooms ..	2	0	to 5 0	Narciss, var., French, dozen bunches .. ..	3	0	to 6 0
Azalea, dozen sprays .. ..	0	6	1 0	Orchids, per dozen blooms	3	0	12 6
Bouvardias, bunch .. ..	0	6	1 0	Pelargoniums, 12 bunches	8	0	12 0
Camellias, doz. blooms ..	1	0	3 0	Pelargoniums, scarlet, doz. bunches .. ..	5	0	8 0
Carnations, 12 blooms ..	2	0	4 0	Primroses, dozen bunches	1	0	3 0
Chrysanthemums, dozen bunches .. ..	2	0	4 0	Primula (double) 12 sprays	0	9	1 0
Daffodils, double, dozen bunches .. ..	1	0	3 0	Roses (French), per doz. ..	2	0	6 0
Daffodils, single, dozen bunches .. ..	2	0	8 0	„ boxes, 100. .. ..	5	0	8 0
Eucharis, dozen .. ..	3	0	6 0	„ (indoor), dozen .. ..	2	0	4 0
Gardenias, per dozen .. ..	3	0	5 0	„ Red, per doz. blooms ..	1	6	4 0
Hyacinth, Roman, 12 sprays	0	6	1 0	„ Tea, white, dozen .. ..	1	6	3 0
Lilac, white, French, per bunch .. ..	3	0	5 0	„ Yellow, dozen .. ..	2	0	4 0
Lilium longiflorum 12 blooms .. ..	3	0	6 0	Tuberose, 12 blooms .. ..	1	0	1 6
Lily of the Valley, dozen sprays .. ..	0	6	1 6	Tulips, dozen blooms .. ..	0	6	1 6
Maidenhair Fern, dozen bunches .. ..	6	0	9 0	Violets, Parme, French, per bunch .. ..	2	0	4 0
Marguerites, 12 bunches ..	3	0	6 0	Violets, Ozar, French, per bunch .. ..	1	6	2 6
Mignonette, 12 bunches ..	3	0	6 0	Violets, Victoria, French, dozen bunches .. ..	1	6	2 0
Mimosa, French, per bunch	1	0	1 6	Violets (English), dozen bunches .. ..	0	6	1 0
				Wallflowers, doz. bunches	2	0	4 0

PLANTS IN POTS.							
	s.	d.	s. d.		s.	d.	s. d.
Arbor Vitæ (golden) dozen	6	0	to 12 0	Ferns (small) per hundred	6	0	to 8 6
Arum Lilies, per dozen ..	9	0	18 0	Ficus elastica, each .. ..	1	6	7 6
Aspidistra, per dozen ..	18	0	36 0	Foliage plants, var., each ..	2	0	10 0
Aspidistra, specimen plant	5	0	10 6	Genista, per dozen .. ..	9	0	15 0
Azalea, per dozen .. ..	24	0	42 0	Hyacinths, dozen pots ..	8	0	12 0
Cineraria, per dozen .. ..	8	0	12 0	Lilium Harrissi, per dozen	20	0	30 0
Cupressus, large plants, each	2	0	5 0	Lily of the Valley, dozen pots .. ..	12	0	18 0
Cyclamen, dozen pots ..	9	0	18 0	Lycopodiums, per dozen ..	3	0	4 0
Deutzia, per dozen .. ..	6	0	8 0	Marguerite Daisy, dozen ..	6	0	12 0
Dracæa terminalis, dozen	18	0	42 0	Myrtles, dozen .. ..	6	0	9 0
„ viridis, dozen .. ..	9	0	24 0	Palms, in var., each .. ..	1	0	15 0
Dielytra, per dozen .. ..	6	0	9 0	„ (specimens) .. ..	21	0	63 0
Euonymus, var., dozen ..	6	0	18 0	Primula, single, doz. pots	4	0	6 0
Evergreens, in var., dozen	6	0	24 0	Tulips, dozen pots .. ..	6	0	9 0
Ferns, in variety, dozen ..	4	0	18 0				



#### FOOD FOR LIVE STOCK.

UPON the sound principle that a farm should be self-supporting, our readers have repeatedly been advised to rely upon home-grown produce for feeding live stock, and to avoid cake bills and other purchased food. We have gone further, and explained how economical in the most comprehensive sense of the term the use of silage, corn, and straw is, and how by a mixed dietary, in combination with general good management, live stock may still be fed to profit. Since the soundness of such advice is questioned, and an inference drawn that it is misleading, we must call to our aid the testimony of some notable



practical agriculturists in support of advice given entirely in the interests of farmers engaged in struggling with difficulties which may prove insuperable where cost exceeds receipts.

Taking silage first of all, many examples could be adduced of the exceedingly strong prejudice of farmers, shepherds, and stockmen against it. The late Mr. Henry Woods, Lord Walsingham's agent, who did so much to prove the value of silage, tells in one of his reports how a shepherd on one of the farms in hand, strongly objecting to using silage, insisted, after a few days' use, that it was "regular upsetting the lambs, as he expected," and that "it would kill a lot on 'em." Persistence in its use under the close supervision of a trusty bailiff answered so well that the lambs were said to be superior to any on the neighbouring farms. Mr. W. A. Darbishire, of Nantle, Carnarvonshire, said in the long hard winter of 1885-6 "Silage was most valuable. I used it for milking cows as a change of diet, for yearling and two-year-old bullocks housed in a covered yard as their main supply of food. I got the sheep to eat it, and in this respect it was most useful and handy. I have not any good statistics as to weight, &c, but some of its advantages are the quickness and handiness with which a large number of beasts can be foddered; no chaffing, slicing, or cooking is required, the food is ready and succulent whenever it is taken out, it is very wholesome food. Beef fed on it is like grass-fed beef as distinguished from stall-fed." This is the evidence of a tenant-farmer.

Earl Powis said that at Powis Castle Farm "we preserved in a silo about ninety tons of green Clover and Rye Grass, put in uncut and weighted with stones. The contents we gave to dairy cows during winter, two feeds per day of silage and three feeds of hay. The quantity of milk was increased, the quality improved, and the cows kept well up in their condition."

From Devon Mr. Alfred Mellor of Otterhead, Honiton, reported the use of 120 tons of silage, of which he said, "My silage turned out good. I fed dairy cows on it, and increased my supply of milk thereby, I should say about 1 lb. more butter per cow per week than I should otherwise have done. Ewes and lambs did well on it with other food." In Warwickshire, Mr. H. J. Sheldon of Brailes House, Shipston-on-Stour, said, "At the end of last June I made a silage stack of about 16 acres Trifolium, with a great deal of shed Oa's in it. After Christmas it came out some first-class sweet ensilage. No waste, except about 7 or 8 inches at the outside, where it was dressed with salt. No mould, or any influence from the outside air, reached beyond that distance. I have given it, in conjunction with other food, to a large number of cow stock, which eat it well, and it does them good."

To these reports we may usefully add an extract from Dr. Voelcker's report of the experiments on ensilage conducted by him at Woburn. Of Grass silage he says, "By these results it is shown that bullocks fed on sour Grass silage of good quality will fatten well, though not quite so well as when fed on a mixture of roots and hay chaff." And of Oat silage, "Taking together the results of the third and fourth experiments, it is clear that Oats cut green and made into silage will produce a very valuable feeding material, and one which in the present instance has proved superior to either roots and straw, chaff mixed, or to hay. Further, the interesting fact has been brought forward that such silage will, if well made, keep perfectly good for at least two years, so that its immediate consumption is not imperative."

There is the evidence of a scientific professor, a landlord, a land agent, and tenant farmers in different counties. To this we add the testimony of Mr. John Walker, author of several works on agriculture. In an article on Ensilage in "Land" he says, "A great advantage in making silage is that one is quite independent of the weather. The wetter the material is when stacked the better, as it presses more easily wet than dry, and

in pressure lies the chief art of making. There are many seasons when half the hay in the country is more or less damaged by rain—at least, it is so far damaged as not to make wholesome diet. This loss might be saved if crops were converted into silage instead of hay. A second advantage is that it leads to the practicability of again bringing stiff clay land into cultivation, and that to a profit. Roots cannot be grown on this kind of land, hence sheep and cattle run short in winter of vegetable diet, which they greatly need. Silage proves an excellent substitute for roots, and is as nutritious, weight for weight, as a Swedish Turnip. Therefore whole breadths of clayey arable land, which is unprofitable to crop in the old-fashioned way, can now be seeded down for one or more years, and the crops be mown and made into silage. Thus farmers are enabled to run a large flock of breeding ewes, the very best paying animals on the farm. A third advantage is that there is not nearly the expense in making silage as in making hay, and this is worthy of especial attention now that labourers are few. The cost of cutting, carting, and stacking only comes to about 1s. per ton, and from 12 to 15 tons of green material are got to the acre."

#### WORK ON THE HOME FARM.

Though the nights have been cold and frosty, yet bright and positively hot days have brought on growth with such rapidity that Wheat rolling has had to be pushed on briskly. Early sown spring corn is now well above ground, and the sowing of mixed seed, Rye Grass, Clover, Sainfoin, and similar green crops is being done expeditiously in all free working soil. Those farmers who pay heed to the mechanical division of soil, as well as to autumn tillage, have now indeed the advantage of those who plough late, and do little or nothing towards soil improvement. Never was the carting of manure for Mangolds done more expeditiously. As fast as it is carted and spread along the furrows, the ridges are split, and the whole field will be quite ready for sowing by the middle of April. Surely no man who has once experienced the keen pleasure of being well forward with all seasonable work can ever afterwards lag behind. Depend upon it, in this, as in other things, it becomes very much a matter of habit. We need not dwell upon the attendant advantages, they are so obviously apparent.

Pasture rich in fertility, from which live stock have been withdrawn all winter, is now so forward in growth that the cows go out four or five weeks sooner than was possible last year. The relief of this is great both to labour and to hayricks, and the improvement in quantity and quality of the milk is alike notable. Very different is the appearance of such well managed pasture to that which is left to chance and seasons. No doubt all growth of herbage is affected by seasons, but starved exhausted pasture is always backward in comparison with that which is in a high state of fertility. Mark such lessons of the seasons, apply their teaching to practice, and reap the reward which attends intelligent earnest work.

Glad were we recently to see the west wall of a farmhouse clothed with the well trained, well pruned branches of some Plum trees. They were in full bloom, which was well protected by sheeting rolled up by day and let down over a stout framework of deal scantling by night. All such space should be turned to account for fruit, either Plums, Pears, Apples, or Cherries; preferably for Pears, which under good management are most profitable.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

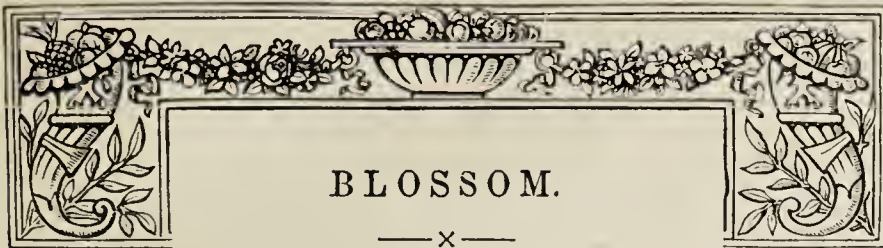
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.	9 A.M.					IN THE DAY.				Rain.
1893. March and April.	Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. 26	30.308	44.3	41.1	N E.	41.3	59.7	33.4	95.0	28.2	—
Monday .. 27	30.120	41.1	38.9	N.E.	41.4	58.2	33.0	90.0	28.1	—
Tuesday .. 28	30.180	46.6	41.4	E.	41.9	59.9	34.6	98.0	28.2	—
Wednesday 29	30.119	46.7	43.4	N.	42.0	64.7	33.1	96.7	27.2	—
Thursday .. 30	30.013	48.7	43.4	S.W.	42.6	65.4	32.7	101.7	28.6	—
Friday .. 31	29.892	52.9	45.6	W.	43.2	67.6	37.2	103.4	30.3	—
Saturday .. 1	29.960	48.9	43.9	N.E.	43.9	69.3	34.8	104.3	30.4	—
	30.085	47.0	42.5		42.3	63.5	34.1	98.4	28.7	—

#### REMARKS.

26th.—Sun shining through thin cloud all day; lunar halo in the evening.  
 27th.—Occasional cloud in the morning; almost cloudless afternoon and evening.  
 28th.—Almost cloudless throughout.  
 29th.—Almost cloudless throughout; lunar halo in the evening.  
 30th.—Slightly foggy till 10 A.M.; sun shining through thin cloud or haze in morning clear afternoon and evening.  
 31st.—Warm, and almost cloudless.  
 1st.—Foggy till 10 A.M., then bright and hot.  
 A rainless week of bright sunshine; warm days and clear cold nights. The ninth consecutive week with temperature above the average.—G. J. SYMONS.





MUCH earlier than usual have the blossoms of fruit trees expanded under the influence of the long-continued sun and the abnormal warmth of March and early April. True, there have been cold nights with frost on many occasions, amounting in some localities to 9° or 10°, perhaps more, but the cold appears to have had little retarding effect on the expanding buds. Cherry and Plum trees were wreathed with blossom more than a week ago in the neighbourhood of London, but their spring beauty is over at a time when it usually begins. The flowers of several Pear trees—in fact, the majority—are fully expanded, and some fading. Captain Daubeney has sent us a photograph of a standard Jargonelle tree, taken at Cheltenham on the 3rd inst., densely crowded with developed blossom. On the 1st inst. we had Josephine de Malines fully expanded, and on the 3rd inst. the earliest Apple blossom, Red Astrachan, in full beauty, quickly followed by Duchess of Oldenburg, while Cox's Orange Pippin, King of the Pippins, and several others are expanding.

Seldom has the blossoming of fruit trees been so advanced at the present date as it is this year. It is three weeks earlier than last year, and a month in advance of 1891. Seldom, too, have fruit trees been more densely covered with flowers and expanding buds. The light crop of fruit on many trees last year enabled them to prepare for the present bountiful display in storing nutrient matter that would have otherwise been expended on the fruit, and the dry autumn had a wholesome effect in maturation. Not one kind of fruit, but, generally speaking, all kinds, are unusually floriferous, and should even a tenth part of the blossoms set on many trees they would be distinctly overlaid with fruit. But it by no means follows that such will be the case. Crowded blossoms mean in the case of many trees weak blossoms, and apart from that a good deal of the blossom that is now so beautiful cannot produce fruit, for the essential organs are destroyed; but so far as we have found there are still more of the flowers that the frost did not injure, and the promise of fruit at the present moment is good. Perhaps it would be better if the flowers were fewer, and consequently stronger, on many trees, as we have found on more than one occasion that thinning the blossom buds on certain trees and branches has had a distinctly beneficial effect. Anything like a general and systematic thinning, however, is for obvious reasons impracticable, and the blossom must simply take its chance on the majority of trees.

It does not by any means follow that the trees which are the first to expand their flowers will on that account fail to bear fruit. It is not the time of blossoming that determines the crop, but the character of the weather at the time and immediately after that is the great determining factor in fruit production, whether the blossoms are early or late. It would not be in the least difficult to adduce instances of the earliest blossoming trees bearing well while those which flowered later were fruitless in summer, for this has often been the case.

We now desire to say that there are trees in hundreds of gardens that may and ought to be relieved of the pressure of blossoming. We mean trees which have been recently planted and the reverse of luxuriant. Many there are almost all over the country in which nearly every branch terminates in a blossom bud. These terminal clusters should be removed—cut back to a

wood bud if an extension of growth is desired. Failing this aid trees innumerable that have come under our notice cannot become thrifty, profitable fruit bearers, but must degenerate into mere pomological pigmies. To bush trees and pyramids, cordons, or fan-trained wall trees the remarks apply; if the terminal bud produces blossom free growth is arrested. Four years ago a gentleman planted a number of cordon trees and followed the instructions "not to shorten them" too literally. The advice given was good in the case of those which terminated in growth buds, and they are fine trees now, whereas those which terminated in blossom buds and these allowed to remain are stunted and spoiled, the blank wall spaces affording unmistakeable evidence of the error that was committed in allowing the terminal fruit buds and clusters to remain. The time is appropriate for drawing attention to this matter, in order that similar mistakes may be prevented.

We have seen many pyramid Pears and bush Apples, planted last autumn and during the present spring, every branch of which—and most of them are mere stubs—terminates in a cluster of blossom. They are trees that we should not have chosen, and the only way of making them thrive is to take off the end of every branch, and as the season advances give liquid manure to and mulch over the roots. This may possibly have the effect of forcing free growth, but if left as they are they will soon be worthless miserable little starvelings, exhausted and worn out, a deplorable case of fruit tree infanticide.

The mention of liquid manure reminds of the great use it may be to many somewhat weak and extremely floriferous trees during the blossoming period. The Cherry tree in a farmer's garden always blossomed, but if the fruit set it never developed, but was cast prematurely, until he was advised to pour several pailfuls of liquid manure into the ground from the stem to the spread of the branches when the blossom buds were advancing. The result was altogether satisfactory, and he has since, and for several years, extended the practice to other trees that were more or less enfeebled, with the best results. They are now healthy, and only under the most inclement weather influences do they fail to yield good crops of excellent fruit.

There are trees innumerable growing against walls—trees the reverse of vigorous—that would be undoubtedly benefited with liquid manure at the present time. It would have a tendency to assist the blossoms in setting, and could not fail to invigorate the trees and support the fruit. Where the soil is very dry, as is the case now near many a wall, it is an excellent plan to first afford clear water copiously and then follow with more nourishing liquid food. Pouring liquid manure into very dry soil is, to say the least, wasteful, and it cannot then have the hoped for effect. It is the extreme dryness of soil near walls that causes many roots to seek for moisture in the subsoil.

It is to be understood that the trees for which liquid manure is advocated at the present time are those which are established in their positions. It is desirable to allow young trees to make fresh root growth before stimulants are afforded, and then only those in a more or less stunted condition are materially improved by the application, but the benefit to these may be great.

No doubt it is true that whatever may be done fruit crops are liable to fail. We have had rain and hail, frost and snow, with destructive blizzards in April and May, and it is, notwithstanding the brilliant spring we have enjoyed, within the bounds of possibility that we may have similar unfortunate visitations again; still, should this be so, those who have done all that was possible to insure success will be none the worse for the effort but better, for they will have no self-reproaches, and every right-minded man must rest the more contented in misfortune when he feels that he at least has done all he could within his skill and means to attain the object in view, for he then knows he has done his duty.



## HARDY FLOWER NOTES.

THE brilliant sunshine of the past few weeks has hastened our spring flowers so rapidly that it is impossible that the publication of these notes can keep pace with the rapidity with which these beauties of the garden have come to delight us, and have as quickly passed away, for spring flowers, as a rule, cannot endure for long the bright weather we have experienced. Thus it is that we are compelled perforce to speak of flowers which ere this appears will have doffed their gala costume of purple or blue or golden yellow, and will have assumed their work-a-day dress of sober green.

The earlier Daffodils have come and gone, to be succeeded by those of later bloom, and they have left behind them memories of their trumpets of brilliant gold, of softest canary hue, or of well nigh purest white, drooping with pensive mien, and now we can echo the words of Wordsworth, and say that still

“ . . . My heart with pleasure fills,  
And dances with the Daffodils.”

The earlier Primulas, too, have passed away, but others, with the Primrose and the Polyanthus, some of quaint form, still delight us, while the Alpine Auriculas have not failed to give their tribute of beauty. Fritillarias, with their drooping chequered flowers; blue Forget-me-nots; Anemones, from the deep blue of the better coloured varieties of *A. blanda* to the forms of *A. nemorosa*, Shelley's “fair and frail Anemone.” These, and many more, have crossed the stage of the season, and have given more than passing pleasure, for throughout the year we can never forget these flowers of the early spring, which never pall upon us, and which are the heralds of the long days of summer with their more gaily coloured blooms.

Looking back then for a little, no flowers have given us more pleasure than the *Chionodoxas*, which have this season been unusually beautiful. Unlike many other treasures of the garden, the Glory of the Snow pines not away in our British gardens, but seems to increase in vigour and beauty from year to year. Perhaps the least attractive of all the several species or varieties is *C. cretensis* or *cretica*, which is so inferior to the others as hardly to deserve a place. This, however, cannot be said of *C. nana*, also a native of Crete, and which I have seen for the first time this year. This is a beautiful little plant, with small white and lilac flowers, and growing about 4 inches in height. This is very rare in gardens, and I prize my bulbs very highly. So well known now is *C. Luciliæ* that a detailed notice of it at present is quite unnecessary. As it is, however, now so cheap, and is so easily increased by means of seed, one can only plead for its more extended cultivation. For some time a pure white variety has been in cultivation, but has been extremely scarce. It is hardly to be expected that it will long continue so, as the *Chionodoxa* is now so frequently raised from seed that white varieties are being found in several gardens. So far I have not found any among my seedlings. Beautiful as is the typical *C. Luciliæ*, with its *Nemophila*-like flowers, it must yield place to the more lately introduced and more brilliantly coloured *C. Smolusii*, which is perhaps not distinct enough to obtain specific rank, but is in any case a distinct and superior variety, having its colours brighter and more distinct. A little clump of this at the base of a rockery facing west, but well sheltered from the western gales, afforded me much pleasure when in full bloom. Of a different colour and very distinct has been *C. sardensis*, with bright self-coloured blue flowers, which are very fine in their way. This does not seem to vary as much as *C. Luciliæ*, and a large number of seedlings, flowering for the first time, have presented little if any variation from the type. Distinct also, and one of the most beautiful of all, is *C. grandiflora*, known more frequently as *C. gigantea*, but the former name is more appropriate, as the plant is of neat and good habit. This has large and exquisitely coloured lavender and white flowers. The latest recruit to the ranks of the Glory of the Snow (*C. Alleni*) has flowered for the first time in Britain this year, but it is as yet impossible to compare it properly with the others. It is said by its introducer, Mr. E. Whittall of Smyrna, to be finer than *C. grandiflora*, which it appears to resemble. Another year will, however, enable us to judge of its comparative merits. So far as one can see at present, it is taller than *C. grandiflora*; but I am doubtful if its flowers will be so well formed.

With all the beauty of the *Chionodoxas* we cannot, however, dispense with the early Squills, which give so much interest to the garden, and which have been so fine this year. *Scilla bifolia* is now presenting so much variety that it will hold its own in popular favour. Now that we have dark blue, light blue, white, pale pink, and deep pink flowers we cannot complain of want of variety in this species. In addition we have the superior *S. bifolia taurica*, and I have seen specimens of a variety of *bifolia* which is by competent judges considered a good and distinct form, and which we hope to see introduced this season. *Scilla sibirica* is one of the

“standard” flowers which grows in favour from year to year, and the introduction of a white variety has been hailed with delight by many. This is still at a high price for a *Scilla*, and I have not as yet seen it; but good critics of wide experience speak in the highest terms of its value and beauty. It received an award of merit at the meeting of the Royal Horticultural Society on March 28th. It is of Dutch introduction, but a white seedling has also appeared in a Scottish garden this year.

So frequently is *Scilla bifolia* found growing along with the *Chionodoxas* that it appears surprising that natural hybrids have not been detected. So far, however, as I am aware, this is the case; but what has not been discovered among plants growing wild has been found in this country, for a hybrid between *S. bifolia* and, apparently, *C. Luciliæ* has been found in the garden of Mr. James Allen of Shepton Mallet. This has been named *Chionscilla*, and through the kindness of the raiser I have been gratified by receiving a plant of this interesting hybrid, which appears to be exactly intermediate between its supposed parents, the colour being blue, grained with white, and the tufted arrangement of the centre showing the character of the *Chionodoxas*. There is every prospect of other *Chionscillas* being obtained, and Mr. Allen's success should stimulate others in seeking to raise new flowers.

Beautiful as they are the bulbous flowers do not constitute the sole attraction of the garden, and other plants call for at least scanty notice; and as being of great beauty and at the same time of troublesome reputation the *Androsaces* may be deemed worthy of a little space. They are among the choicest gems of the rock garden, and are well worthy of repeated attempts in cultivation should success not be at first attained. For some time I have been gradually adding to the species in my garden, and severe as has been the past winter all have survived and are in perfect condition. This is due to what is a necessary precaution in this climate, *i.e.*, covering them with a sheet of glass or a slate, slightly elevated above the plant, but so that a free circulation of air may be secured. Cold seems to have no terrors for the *Androsaces*, and this protection from damp is put over them in October and remains until March. Upon the whole I prefer a slate to glass, and remove this on fine dry winter days. The glass seems to forward the blooms too rapidly. The soil used is sandy peat with an abundance of grit. *A. carnea*, which seems to dislike lime, has nodules of granite mixed with the soil, and is surfaced with fine granite gravel. I grow all my plants on terraced rockeries facing west or south-west, and several have been very beautiful, among the most attractive being *A. chamæjasme*, with pretty flowers, which on opening are white with a yellow eye, this eye becoming crimson and the petals passing off to rose. *A. sarmentosa*, *A. lanuginosa*, and some others are also well worthy of notice.

Very pretty, too, and forming a close carpet of green, surmounted by spikes of light blue flowers, has been *Veronica nummularifolia*, for which I have been indebted to Rev. C. Wolley Dod on the occasion of a well-remembered visit to his delightful garden. I know nothing of this plant, of which I have seen no record, but it is one I highly appreciate, coming into flower as it does here in the end of March and growing in ordinary soil on the terrace of a rockery, and covering itself with its fine and attractive flowers.—S. ARNOTT.

## PRACTICAL HINTS ON MELON CULTURE.

CONTINUING my remarks on this subject from page 268 I may say that before planting I always take especial care to have the top of each mound slightly above the inner wall of the bed, so that when the final earthing is given the collar of each plant is still a little above the surrounding soil. By taking this precaution there is much less likelihood of canker giving trouble than when the surface of the bed is quite flat by the time earthing is completed. The soil forming the mounds should be rammed moderately firm, and somewhat flat on the top; if made quite conical in shape great difficulty is experienced in watering thoroughly when once dry.

Before turning out the plants see that the balls are thoroughly moist, otherwise the fresh soil will become too wet in the endeavour to effectively moisten the balls after planting. Take care not to bury the stem when planting; press the soil firmly around the balls, and just cover the surface with a little fresh soil. A stick should be placed to each plant, and be tied to the bottom wire of the trellis; it is then an easy matter to loosely secure the growth to it as it advances, and thus avoid the annoyance of having promising young shoots broken.

The process of earthing up should be carried out more gradually with early Melons than with later ones, as the roots are then very susceptible to a check of any kind, and when a thick layer of soil is placed over them they make less progress, through not



getting the full benefit of the limited amount of light and sunshine which we have in the early months of the year. I find the plants thrive much better if the earthing is done on four separate occasions for early Melons, and on two or three for later ones. In all instances the soil employed should be warm and moderately dry. When in this condition it ought to be rammed firmly, but should the plants through any cause be somewhat stunted in growth the soil may with advantage be left with but little ramming. I always like to give the final earthing by the time the fruits are as large as a hen's egg, so that the roots may thoroughly permeate every portion of the soil by the time the fruits approach maturity.

The best method of stopping and training to adopt is a matter which has undergone much discussion, and the various systems advocated have each their special advantages, provided they are well carried out. Taking all points into consideration, I believe the practice of securing one crop of fruit from each set of plants, then uprooting them, and replanting with a fresh batch, is the best in the majority of instances; but where only one house or pit can be devoted to Melon culture, I would strongly advise one set of plants to be grown through the entire season. By so doing a regular supply of fruits may be maintained by continually laying in fresh growths and setting a few flowers when the preceding fruits have completed their first swelling. This system is also well adapted for structures in which a large amount of roof space is at command; and, moreover, the highest obtainable flavour in Melons is developed under this system of culture. When carrying out this method, stop the leading growth when it has advanced 3 feet from the bottom wire, and the side shoots at one leaf beyond the fruit. The leader may then be allowed to extend for another 3 feet, and the laterals treated in the same way as the first set, then by the time the allotted space is covered, some of the old shoots at the base of the plants will be ready for removal, their place being filled up by young growths, which under good cultivation form readily enough in all directions. By keeping these thinly disposed, moderately strong wiry-looking shoots are obtained which are much less likely to be affected by canker than the strong growths on young plants.

When the system described above is followed the laterals which form near the first wire of the trellis should be stopped to one leaf, for they generally produce flowers which open so much in advance of others that there would be but little chance of obtaining a good crop of fruits, if these early flowers were retained and fertilised, unless the setting of other flowers were delayed till this pair of fruits had completed their first swelling. All other laterals should be allowed to grow for a time until it can be clearly seen that four or five fruits in the same stage of development have been obtained; every alternate lateral should then be cut away, and one or two leaves (according to the space at command) be retained beyond the fruit. Should any fruit at this early stage show signs of growing strongly at the expense of others on the same plant, tie the shoot carrying it downward so as to cause an abrupt bend below the fruit and thus check the flow of sap. When a proper balance has been restored secure the shoot again in its proper position. Simple attentions of this kind performed at the right time invariably account for the difference between full even crops and uneven or light ones.

The subsequent attention required in the way of stopping is to remove or stop at one joint laterals which are being formed in parts where there is no room for their development, always taking care to avoid stopping the whole of the young growths at the same time and to have a little growth constantly going on on all shoots carrying a fruit as a means of keeping up active root-action and preventing the production of tough-skinned badly ripened fruits.

When stopping is performed in wet or dull weather an equal mixture of lime and soot should be placed upon the wounds made by pinching, which should always be done with the finger and thumb in preference to the knife.—LABOR OMNIA VINCIT.

(To be continued.)

### EARLY BEDDING.

ABOUT this date, earlier or later according to state of weather, I plant out all those bedding plants that are not tender, such, for instance, as *Königa variegata*, *Veronica Andersoniana variegata*, *Pentstemons* and *Calceolarias*. Where it is possible to put out these plants in their places thus early, it facilitates the planting of tender things at the usual time. Further, a certain amount of frame space is thus left clear for other plants, and there is no labour wasted in watering and other necessary attentions. The transplanting of *Calceolarias* at this period saves much work. Until I planted *Calceolarias* in this way they could not be depended upon to live, now they thrive exceedingly well. Another plant which caused much

annoyance by dying off during the early autumn months is *Chamaepeuce diacantha*; and since I have planted early no plant could thrive better.

For the past few years Dahlias have also been planted on the beginning of April. The evolution of this practice was in this wise. Cactus Dahlias are late in flowering when propagated from cuttings in the spring. The tubers of spring-struck plants, moreover, are apt to decay during the winter. The original stock plants of Juarezi happened to be put out in a warm position, where for several years the plants lived undisturbed. These invariably flowered early and most abundantly, even in seasons when hardly a flower could be obtained from young plants. For two years I started all the old tubers in cold frames and planted them out at the usual time. Then I tried some single varieties with buds started, planted out in the first week of April, and since that time I have planted all our stock at the same period and in the same way. It will be understood that exhibition blooms are not looked for, but only flowers for cutting and plants to give a good decorative effect.

I adopt the following method of planting the Dahlias. The tubers are cut or pulled into good sized pieces, each with two or three buds started. The stations which the plants are to occupy are then marked off. A hole of sufficient size to allow a covering of 3 or 4 inches of soil above the root when planted is made at one end of a row. The soil from the second hole is placed over the first plant, then that from the third is put over the second, and so on. The growths come up strongly about the end of May. When large enough two shoots of each plant are pegged down, and the superfluous growths are removed. In addition to securing a healthier, more early, and free-flowering plant with tubers which keep without loss, the system has these advantages. There is no necessity to start plants in hothouses in order to produce cuttings, because the latter are not required. There is no potting, nor space occupied in houses or frames, and the work of planting is done quite as expeditiously and with less pressure than at the usual time. Where only a few plants are cultivated the latter feature is not of course of much account; but when, as in our own case, some 500 plants are required, the difference in every respect is marked. Two years ago I left our plants in the north with their earliest flowers open, and did not see a single bloom during a flying visit, which embraced parts of Kent, Essex, Surrey, and Middlesex. A visitor from the south last year expressed surprise to see Dahlias flowering in Scotland at a time when no flowers were to be seen in the south of England.

The practice of pegging down the young shoots is also a good one. Last year I was complimented by a well-known horticulturist on the fine plants of Tom Thumb Dahlias I had in a large clump. He was somewhat surprised when assured they were ordinary sorts which had been pegged down.—B.

### CHASSELAS NAPOLEON GRAPE.

THIS Grape is not, according to the leading French authorities, synonymous with *Panse Jaune*. Mr. Etienne Salomon says Chasselas Napoléon is not a Chasselas, and its real name is *Bicane*; origin, the Department of Cher; very vigorous, pretty fertile, very large; bunch loose, spreading; berry ovate, very large, amber-white; midseason.

*Panse Jaune* is described as follows:—Not a Chasselas; origin, Provence; very vigorous, fertile; bunch large, long, with shoulders, not compact; berry above medium size, ovate, greenish-white, turning to yellow on maturity; indifferent setter; season late.—HELENEVELD.

Now that all has been said that can well be said in relation to this old French Grape, may I venture to suggest to the Fruit Committee of the Royal Horticultural Society that all this bother might have been avoided had that body, at the time the Grape was submitted to it, before hasting to award a first-class certificate, rather have held any award over until full and complete inquiry had been made as to its origin, character, and general fitness for the honour proposed to be granted?

It is rather a serious thing to make awards of this kind to anything, for its value is regarded by outsiders oftentimes with feelings of greater concern, perhaps of reverence, than exists within the Committee; and such an award to a Grape, and especially what is now proved to be an old and oft-tried and oft-rejected Grape, renders such an award all the more serious. The moral is obvious: neither to oblige a neighbour, or to gratify a hurried fancy for anything new or old, should there be too much haste, and if all such awards were provisional for three months prior to confirmation or otherwise, it would be all the better.—VITIS.





## PROSPECT OF EARLY ROSES.

IN reply to "Suburban's" inquiry on page 280, Roses here are very early. If fine bright weather still continues I think probably Maréchal Niel, Gloire de Dijon, Lady M. Fitzwilliam, Niphetos, and others will be fully expanded in a fortnight's time. Some may be earlier from a south aspect.—G. F., *Trafalgar, Salisbury.*

## CLIMBING LA FRANCE ROSE.

AN American contemporary, *Gardening*, in a recent issue to hand, publishes an illustration of the climbing La France Rose, which to all appearances is a charming variety. The illustration was prepared from a photograph taken in Peter Henderson & Co.'s nurseries last November. The variety is described as being "a strong, stout climber, healthy and with fine foliage, and it bears large fine blooms. But it has every appearance of being a somewhat shy bloomer. Commercially, perhaps it may not be grown for cut flowers, but amateurs will like to have a plant or two of it in their greenhouse to run up the rafters in company with Gloire de Dijon, Lamarque, and Maréchal Niel."

## THE ROSES OF OUR CHILDHOOD.

No flowers seem fairer to our vision or our remembrance than those which are links between the present and the past. During the last six months I have introduced into my garden at least seventy modern varieties of the Rose: Hybrid Perpetuals, Bourbons, Noisettes, and Teas; Roses from Austria, Persia, China, Japan, France, Holland, and even from America; but the old red Rose (which has grown from time immemorial at the corners of the garden), so loved of my father, an ardent horticulturist, has been lovingly retained.

I fear that many of our beautiful old-fashioned Roses are fast disappearing from the regions of cultivation. There are however—thanks to the efforts of our greatest rosarians—some striking exceptions to this general rule. Among these I may mention the Harrisoni, the Austrian Copper, the Persian Yellow, and the exquisitely fragrant "Provence" Rose. That one fine variety of the last-mentioned species should ever have received the name of "Old Cabbage" has excited the indignation of the Dean of Rochester, who, in his book on the Rose, suggests that the title in question may have been invented by a tailor, though I think it more probable that it was created by a vegetarian. No such name, most fortunately, has been applied to the White Provence, which Mr. Cranston describes in his book on Rose culture as the "purest in cultivation." Unlike many modern and more formidable white Roses—such, for example, as the White Baroness and Merveille de Lyon (for the most part partaking of the character of their venerable parent, the Baroness Rothschild)—the White Provence, also called "La Blanche" or "Unique," is remarkably fragrant, this indeed constituting, quite independently of its beauty, a supreme attraction. In my garden, therefore, I have given this Rose a central position, with Rosa Harrisoni, for the sake of artistic contrast, on either side.

The Moss Rose derives its origin and most of its attributes from the Provence, a fact which must be transparent to any rosarian who has carefully studied and compared their formation. The former came to us originally from Holland; the latter, though bearing the name of a very historical and romantic French region, identified with all that is heroic and chivalrous, is generally supposed to have been of Italian extraction.—DAVID R. WILLIAMSON.

## RHODODENDRONS.

I DOUBT not that "E. M." (page 271) is right in maintaining that these showy shrubs will not thrive in the turfy loam obtainable at Swanmore, because from the excellent description he has given of it, it is quite clear that lime enters largely into its composition; thus it belongs to that class of soils which I stated on page 250 should be strictly avoided for Rhododendron culture. I do not, however, agree with "E. M.'s" suggestion that soils containing only a small percentage of lime are unsuitable, if not fatal, to the growth of Rhododendrons, simply because nearly all soils contain lime in small quantities, and I doubt if any fertile soil in this country could be found totally destitute of it. Yet in many instances these popular shrubs flourish in the natural soil, and develop into splendid specimens.

In some parts of Kent, Surrey, and Wiltshire I am acquainted with fine banks of Rhododendrons which may have been planted in prepared soil, but the roots have long since found congenial quarters in the natural soil around. Now it is evident these soils cannot be entirely destitute of lime, because Hops, fruit trees of all descriptions, and even Vines grow well in the same soil, which they would not do if a small percentage of lime were not present. This, I think, proves that it is only when soils are largely impregnated with lime that they are wholly unsuited to the growth of Rhododendrons, and that with liberal additions of the decaying refuse described in my previous note may be rendered quite suitable.

In the soil at Warwick they grow freely enough when well established if treated liberally, but there is some difficulty in securing good growth in the early stages. This I attribute to the fact that the soil is rather

light and poor; being also thoroughly well drained, the plants suffer from drought if not given special attention in watering. When, however, the roots have pushed well into the surrounding soil, with frequent top-dressings the plants flourish. Before these top-dressings are given I find it is a good plan to loosen the surface of the soil with the point of a fork. Although this practice has been frequently condemned, I am convinced it is of great benefit to the plants especially when in a young state, as it enables the rains to percolate and carry nutriment to the roots. I was led to adopt this practice by noticing how well a few young plants thrived when planted in a mixed shrubbery which is forked over each spring. I thoroughly agree with "E. M." as to the efficacy of cow manure as a top-dressing for Rhododendrons, but unfortunately I am not able to obtain it in sufficient quantities for that purpose.

In conclusion, I may say that I do not dispute there are many soils so impregnated with lime as to make Rhododendron culture an impossibility in them, and where this has been proved to be the case they should be planted entirely in peat, leaf soil, or any refuse I have previously recommended; but I am also convinced there are many instances where they would flourish in the natural soil if it were properly prepared. It is an easy matter for anyone to find out if they are so grown anywhere in their locality. If not, let them try a few plants for themselves, we should then have the culture of one of the most showy of hardy shrubs greatly extended.—H. D.

## THE LARCH DISEASE.

I HAVE not noticed any correspondence in the *Journal* respecting the Larch disease for some time now. I should be glad to know if that means that it is not so bad in the country generally. My reason for asking is that it is very bad in this district, and has been for several years now, whole plantations being destroyed by it. In some parts it appears to be caused by the Larch aphid or bug—Chermes Laricis; in others by the Larch canker, which I suppose is caused by the parasitic fungus. It is so bad that planters are hesitating very much with respect to continuing their annual planting of Larch.

I should also be glad to know if the Abies Douglasi has been planted extensively with a view of superseding the Larch anywhere, and if it has been a success; also its value as a timber tree compared with the Larch, as it appears to grow very well here, although we have not yet planted it extensively.—R. C. WILLIAMS, *Crosswood Park, Aberystwith.*

## POPULAR HALF-HARDY ANNUALS—SOWING THE SEED.

WHAT a fine floral display can be produced in the flower garden during the summer and autumn by sowing seeds of annuals at once where the plants are intended to flower. Beds may be filled exclusively, and with admirable effect too, with the best and most distinct and telling varieties of the Calliopsis, Godetias, Cornflower (Centaurea Cyanus), Alonsoa Warscewiczii, Nemophilas, Nigella damascena (Love-in-a-mist), Lunanthes, Clarkia (Carter's Morning Glory), Gypsophilas, Gaillardias, Collinsia, Eschscholtzia compacta, Phlox Drummondii, Asters, Stocks, dwarf Tropæolums, and Zinnias.

For sowing in patches in herbaceous borders Shirley Poppies, Malope grandiflora, Larkspur, Lupinus, Prince's Feather, and Love-lies-bleeding may be added to the above list. As the descriptions and average heights of all of the plants mentioned above may easily be obtained from the trade list of any leading seed merchant there is no occasion to give them here, further than saying that Calliopsis Drummondii, C. tinctoria, and C. Burridgei, Godetias Sutton's Ladybird, Lady Albemarle, and Apple Blossom should be included in every list of select annuals.

Individual beds filled with Alonsoa Warscewiczii compacta, a half-hardy annual attaining to a height of 1 foot, and having dark green lanceolate serrated foliage and racemes of bright scarlet flowers, are very telling in effect when contrasted with surrounding beds of Calliopsis Drummondii, yellow; Godetia Ladybird, flowers pearly white, plants 6 to 9 inches high; Collinsia grandiflora, purple and blue, height 1 foot; Tom Thumb Nasturtium "Aurora," varying in colour from primrose to pale pink; N. cœruleum roseum, flowers rose, tinged with blue; Phlox Drummondii. Stocks, Asters, and other things. The beds having been previously dressed with some light, well-decomposed manure, dug and trodden, should be raked before scattering the seed very thinly on the surface. The soil should then be scratched over with a fine-toothed rake, and then watered through a fine-rose can, repeating the watering every afternoon in the absence of rain until the seedlings appear. Thin the young plants sufficiently to allow of their making a sturdy and consequently more floriferous growth than would otherwise be the case. Where the soil is of a stiff nature it will be advisable to scatter a little fine, light, rich mould over the surface before and after sowing the seed, finishing off with a firm, even surface. Waste soil from the potting bench passed through a quarter-inch mesh sieve would answer this purpose admirably.

Slugs frequently work havoc among young plants of annuals, therefore a sharp look-out should be kept for these destructive pests in the evenings just before dark, or afterwards with the assistance of a bull's-eye lamp, when they will be found engaged in the demolition of the plants, and needless to say the slugs should be collected and destroyed. If the plants are dusted over with a mixture of lime and soot when damp it will preserve them from being injured in the direction indicated.—H. W. WARD, *Longford Castle.*





## ODONTOGLOSSUM NÆVIUM MAJUS.

THIS is one of the most beautiful of all the New Grenadan species, and it is not difficult of cultivation. Although not a very robust grower, yet with ordinary care and attention it may be increased in size year by year, and grown into neat little specimens. This species enjoys a position as near the roof glass as possible, both for the sake of light in winter, and also for an abundance of air in summer. It must be closely shaded during the summer, and cannot be kept too cool. It requires an abundant supply of moisture, both in the atmosphere and at the root, frequent syringing on bright sunny days being very beneficial. Although it will not stand with impunity the same cold in winter as *O. crispum* and other occupants of the very cool houses, yet it must not be coddled, a minimum of 45° will suit it admirably.

It should be potted in the usual peat and sphagnum mixture, in the proportion of two to one respectively. Use clean pots and fill with about two-thirds drainage, covering this with a layer of moss to prevent the earthy particles of the peat being washed downwards among the crocks. The plants should be raised fully an inch above the pots, which must be only large enough to allow about an inch of compost around the plant. Wrap a little of the peat round the roots close under the base of the bulbs. The plant may then be easily fixed in the exact position required by filling around with compost, and pressing it firmly into position, introducing at the same time a few small pieces of broken crocks or charcoal. Then a few "points" of moss should be dibbled in, and all trimmed off neatly in the shape of a cone. This will be found a better and more expeditious way than any other, because of ease with which the plant is secured, and the impossibility of its rocking—a matter of great importance in the well-being of any Orchid.—H. RICHARDS.

## CULTURE OF CALANTHES.

THESE plants should be potted at once if not already done. In potting *Calanthes* it is not necessary to elevate the pseudo-bulbs above the rim of the pot, indeed they thrive much better when they are kept below the rim. Some growers recommend growing these plants in sphagnum moss, but after having given it a trial for two successive years I have come to the conclusion that they thrive much better in a more substantial mixture. The compost I find most suitable for them is fibrous loam, lumpy peat, charcoal, cow manure, and a little sharp sand. The pots should be half filled with crocks, with a layer of moss placed over them to keep the soil from washing down amongst the drainage. Fill the pots with the compost before mentioned, burying the pseudo-bulbs half an inch, or thereabouts, placing three large bulbs or five smaller ones into an 8-inch pot, according to their strength.

Another very good method of growing these plants is to prepare a number of 9-inch pots by half filling them with crocks as mentioned, and put a 5-inch pot in the centre of each, placing moss between the pots. When the foliage has died away, which generally takes place about the time the flowers commence to open, the centre pot may be removed and *Adiantum cuneatum* or some other Fern substituted in its place. Where a variety of plants are in request for house decoration this method of cultivation is more especially to be recommended on account of the pleasing effect thus produced and the great length of time the flowers remain in perfection.

After potting the plants should be placed in a position as near the glass as possible, and in the full sunlight in a warm house. I grow mine in the early Melon pit, the strong heat and plenty of atmospheric moisture proving beneficial to them. The process of watering must be carefully performed; in fact, a slight syringing at closing time would be quite sufficient till the new roots have taken well hold of the compost, after which water may be administered more freely. After the flower spikes become visible liquid manure, such as drainings from the cowsheds, to the extent of one part to three of water, may be applied every other day with satisfactory results, it being much better to apply it little and often than to risk injuring the plants by giving too strong an application. The foregoing remarks apply only to the *C. Veitchi* and *vestita* varieties.

*Calanthes* are subject to attacks of various insect pests, brown scale being especially troublesome; scale should therefore be

diligently and continually sought after and destroyed, otherwise the foliage will quickly become disfigured, and present an unsightly appearance.—GEORGE PARRANT, *Ashby Lodge Gardens, Rugby.*

## AERIDES VANDARUM.

THIS *Aerides* has been in cultivation for many years, but is still a somewhat rare plant. It was figured in the "Botanical Magazine" as long ago as 1857 under the synonym *A. cylindricum*, a name under which it is still to be met with. In general appearance it resembles *Vanda teres*, but has longer and more slender leaves. These are terete, about 6 inches long, and are arranged alternately on the stem about 1 inch apart. The flowers are produced singly or in pairs on short spikes springing from the side of the stem opposite the leaves. They are about 2 inches across



FIG. 56.—AERIDES VANDARUM.

and of the purest white, except for a slight tinge of rose on the inside of the column. The sepals and petals, which are spreading, wavy, and crisped at the margin, are nearly unguiculate. The lip is three-lobed and rather remarkable. The front lobe is very irregular and twisted; the side lobes are large and stand straight up. The spur is about 2 inches long, of a greenish colour tipped with red.

The plant may be grown in baskets or cylinders or on blocks of soft wood, the last being preferable. It requires a stove temperature and moist atmosphere with plenty of water during the growing season. In winter it may be kept a little drier, but not to such an extent as will cause the leaves to shrivel. *A. vandarum* is an Indian species, and flowers during the winter or early spring. Fig. 56 represents it.—A. B.





**EVENTS OF THE WEEK.**—The principal event of horticultural interest of the ensuing week will be the Ghent Quinquennial Exhibition, which, as mentioned in another paragraph, opens on the 16th inst. The Linnean Society will meet on Thursday, 20th inst., and there will be the customary auction sales.

— **THE WEATHER IN LONDON.**—The past week has been dry and for the most part sunny. Tuesday, however, was dull and cold, north-east winds, prevailing. Similar weather continued early on Wednesday, and at the time of going to press it is fair but rather cold with northerly winds.

— **THE WEATHER IN THE NORTH.**—The past week has been throughout dry, the days warm, one or two extremely so for the season, with frosts of 2°, 4°, and 6° on three nights. The barometer fell somewhat during the past two days, but is still very high, and although this morning, 11th, is dull there is no appearance of change. Hedges are far advanced into leaf, a month ahead of last year.—B. D., *S. Ferthshire*.

— **UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.**—The monthly meeting of this Society was held on Monday evening last at the Caledonian Hotel, Adelphi Terrace, Strand. The chair was occupied by Mr. George Kelf. The usual business was transacted, five new members being elected and three others nominated; S. M. Segar, Esq., also became an honorary member. Two members only are on the sick fund, showing the Society to be in a very healthy condition. The usual vote of thanks to the Chairman ended the meeting.

— **SUNSHINE.**—For the last five weeks the daily amount of bright sunshine over the greater part of the midland and eastern counties varied from seven and a half to seven and three-quarter hours, the proportion of its possible amount being in nearly all cases over 60 per cent. At the south coast stations the mean daily amount was about an hour greater than in the inland districts, the per-centage for the five weeks being over seventy, and in some places as high as seventy-two to seventy-three.

— **FLOWERS ON THE STOCK EXCHANGE.**—A daily contemporary says:—"With the arrival of the spring flowers, passengers on the Great Eastern Railway see once more every Saturday what is known on the line as 'the flower carriage.' One of the compartments of the train is filled with Stock Exchange men, each of them carrying in one way or another a number of fresh-cut flowers gathered from their gardens in Essex. These flowers are put up to auction in 'the House' in the course of the morning, the proceeds week by week being sent to one of the London hospitals."

— **FAILURE IN FORCING STRAWBERRIES.**—I shall be obliged for any information that can be given in regard to Strawberries in pots. I force several hundreds in Peach houses, and this season Sir J. Paxton has shown very little bloom; instead of the crowns remaining plump they have split up into three or four growths, and nearly half are without flower trusses. The roots are healthy and foliage good. I take the runners from young plants put out for the purpose, and peg the runners into the fruiting pots. I shall like to hear how others are showing this season.—J. BOWLER.

— **THE WEATHER DURING MARCH AT RIPLEY, YORKS.**—This was a memorable month, yielding a maximum of sun and a minimum of rain. It opened rather roughly, but in a few days settled down to beautiful, bright, calm weather with frosty nights. Although we have registered as much as 15° of frost during the month all fruit blossom has escaped injury owing to comparative dryness of the atmosphere. The total rainfall amounted to 0.58 of an inch, which fell upon five days. The greatest daily fall occurred on the 1st, when 0.25 of an inch was registered. Mean reading of barometer, 30.01. Mean maximum temperature, 53.7°; mean minimum temperature, 28.9°. Mean temperature of month, 41.3°. Highest maximum temperature, 65° on 20th; lowest minimum temperature, 17° on 19th. Hardy fruit prospects are exceptionally good in this district, provided that frost will only retire at an early date.—J. TUNNINGTON, *Ripley Castle Gardens*.

— **GARDENING APPOINTMENTS.**—Mr. Geo. Garner, for the past seven years gardener to Mrs. Braddyll, Amberwood, Christchurch, has been appointed gardener to E. A. Drummond, Esq., Cadland Park, near Southampton.

— **DUTCH FLOWERS.**—During the past week immense quantities of Hyacinth flowers have been received from Holland, and have realised comparatively low rates. The white and pink flowers, as a rule, obtain the highest prices in the Metropolis.

— **INTERNATIONAL JUBILEE HORTICULTURAL EXHIBITION, LEIPSIG.**—It is reported that "A great Exhibition under this title will be held at Leipzig from August 25th to September 5th next, to celebrate the fiftieth anniversary of the foundation of the Leipzig Gardeners' Society."

— **DEATH OF MR. W. R. M'KELVIE.**—We regret to record the death, on the 2nd inst., of Mr. William Ross M'Kelvie, Superintendent of Public Parks and Cemeteries in Dundee. The deceased, who was between sixty and seventy years of age, was appointed to his Dundee office in January, 1863.

— **MR. ROBERT MACK.**—This gentleman, a well known Northern Rose grower, has been placed upon the Commission for the North Riding of the county of Yorkshire on the recommendation of the Lord Lieutenant, the Marquis of Ripon. Mr. Mack is the senior partner of the firm of Robert Mack & Son, Rose Nurseries, Catterick and Scorton, Yorkshire.

— **SPIRÆA JAPONICA.**—Supplementary to Mr. Parrant's note on page 253 "G. F." observes:—"I find that this useful plant forces a great deal better when planted for a couple of seasons in any good garden soil. By this method the plants have a good rest. I have some now in bloom with twenty to thirty spikes of flower equal to those imported."

— **RHODODENDRON PRINCE CAMILLE DE ROHAN.**—This is one of the earliest varieties we have, and the colour, French white beautifully spotted with crimson, is pleasing. The flower trusses come in useful for room decoration. The growth of this variety is all that could be desired, being compact and floriferous.—E. M.

— **KENT FRUIT GROWERS' ASSOCIATION.**—The annual general meeting was recently held at Sittingbourne. Among other business conducted a cheque for £50 (second contribution, making £100 in all) was drawn, and directed to be forwarded to the Canterbury Chamber of Agriculture towards the expenses incurred in the proceedings before the Railway Rates Commission.

— **GHEENT QUINQUENNIAL EXHIBITION.**—This Exhibition, which opens on 16th inst. and closes on the 23rd inst., is expected to be both large and varied, but there does not appear to be anything like the "home interest" manifested in it that has been apparent on some previous occasions. We understand that the arrangements have been completed, and that some very fine exhibits are forthcoming. Orchids will form a special feature, and new plants will be well represented.

— **WEATHER AT LIVERPOOL.**—We have had another glorious week of sunshine and fine weather, but still no rain. The promise for fruit is wonderfully fine—Pears, Cherries, Plums, and Damsons being in full blossom, whilst the Apple trees are just covered with their pink buds, at the point of bursting. Although warm during the day, we have had rather severe frosts, with N.E. and N.W. winds, at night, but as yet I cannot detect any damage done to the blossom. Warm showers would work wonders, more especially on the small seeds.—R. P. R.

— **TRENTHAM AND HANFORD HORTICULTURAL SOCIETY.**—The sixth annual Exhibition of the above Society will be held, by the kind permission of the Duke of Sutherland, in Trentham Park, on Thursday, July 20th. A comprehensive schedule has just been issued, and this indicates that the Exhibition will be of an exceptionally interesting character. Some very liberal prizes are offered, those in one class, for groups, amounting to £72 10s. This is as large a sum probably as has ever been offered in a similar competition at any show, and should produce a keen competition. The Duchess of Sutherland, who takes a warm interest in the Show, offers £5 for flower prizes in the cottagers' division. The prizes in this department of the Exhibition are liberal throughout, and should attract large entries. In the competition for the best cultivated cottage garden a new departure has been taken. Instead of offering one set of prizes for the whole district, the Committee has divided the district into three, and prizes amounting to £3 8s. 6d. have been allotted to each. Entries close on Thursday, July 13th. Mr. John Taylor is the Hon. Secretary, and to his exertions much of the success of this Society is due.



— **WISTARIA CHINENSIS.**—"G. F., *Salisbury*," writes:—"This beautiful climber is now opening its long clusters of bloom freely on my cottage. It is a month earlier than last season, when it was cut off by frost on the 7th of May."

— **CAPE FRUIT.**—The Cape Fruit Syndicate have forwarded by the Royal Mail steamer "*Norham Castle*," which arrived in England last week, some boxes of Grapes addressed to the Prince of Wales and to Mr. Gladstone. This fruit has been sent as a gift from Sir Henry Loch, Governor of the Cape Colony. It would be interesting to know in what condition the Grapes arrived.

— **SUNDERLAND GARDENERS' SOCIETY.**—The fifty-second general meeting of the Society was held recently, the Chairman (Mr. Bolam) presiding. The Treasurer's report was read and adopted. Mr. Hall read an interesting paper on the culture of double Violets in frames and pots. A discussion followed, in which several members took part. A hearty vote of thanks was given Mr. Hall for his instructive and interesting paper.

— **ROYAL HORTICULTURAL SOCIETY OF IRELAND.**—It is stated that the following list of Exhibitions will be held under the auspices of this Society during the current year:—Spring Show, Royal University Buildings, Earlsfort Terrace, Thursday, April 20th; Summer Show, Lord Iveagh's Grounds, Thursday, July 6th; Autumn Show, Lord Iveagh's Grounds, Friday, August 25th; Winter Show, Royal Dublin Society's Buildings, Ball's Bridge, Thursday and Friday, November 16th and 17th.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the ordinary meeting of the Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 19th instant, at 7 P.M., the following papers will be read:—"The Direction of the Wind over the British Isles, 1876-80," by F. Campbell Bayard, LL.M., F.R.Met.Soc. "Notes on Photographs of Lightning taken at Sydney Observatory, December 7th, 1892," by H. C. Russell, B.A., F.R.S. "Notes on Lightning Discharges in the Neighbourhood of Bristol, 1892," by Ernest H. Cook, D.Sc. "Constructive Errors in some Hygrometers," by W. W. Midgley, F.R.Met.Soc. The above papers will be illustrated by lantern slides.

— **TESTIMONIAL TO MR. J. R. S. CLIFFORD.**—We are glad to learn that our entomological, and what we may also term our historical correspondent, Mr. J. R. S. Clifford, the author of "*Gravesend and its Neighbourhood*," "*Homes and Home Life in Bible Lands*," &c., &c., has been presented with a testimonial in recognition of the various efforts he has made for the intellectual advancement of Gravesend during many years' residence, and also of his general literary labours for the past twenty-five years, which have been largely of a philanthropic nature. The list of subscribers was headed by the Earl of Darnley, and a sum of £50 was speedily contributed towards the object in view. We congratulate our excellent coadjutor on this mark of esteem conferred on him by his friends and neighbours.

— **SPRING FLOWERS AT HAMPTON COURT.**—Although the Tulips planted amidst the Polyanthus here are, because of the recent sharp frosts and continuous dry weather, hardly so fine as usual, yet where the Polyanthus grounds are white or yellow-flowered, and Tulips of dark hues, the effects are very charming. How well they do Polyanthus at this favourite resort the thousands of plants put out into the beds show. There must be at least 5000 transplanted, mostly large clumps, and blooming profusely. The soil here, because so often worked and prepared for summer flowers, is perhaps lighter than is desirable for plants that have a preference for firm deep ground, but there is plenty of water at hand. From the present time till the end of the month the Hampton Court spring flowers should be very attractive.—D.

— **THE SPRING OF 1893.**—Mr. R. Maher, Yattendon Court, Newbury, writes:—"The splendid spell of bright sunshine, and perhaps the finest month of March on record, has shown some features of gardening interest worth recording. It has struck me that most of the early flowering hardy shrubs, such as *Andromeda floribunda*, *Laurustinus*, *Daphne laureola*, *Prunus californica*, *Ribes sanguinea*, and *Berberis aquifolium*, have never to my memory been so fine. The bloom of Plums, Cherries, and Pears are also a splendid sight at this time, and the promise is certainly very bright. On one occasion we had 12° of frost in March, but everything being so dry nothing seemed to suffer. All that seems wanting at present are showers to make a fine fruitful season. We had but very little rain during the month of March, and so far we have not had an April shower."

— **TORQUAY DISTRICT GARDENERS' ASSOCIATION.**—The first annual meeting of this Association was held on March 28th. The Secretary reported a membership of 120, several new names being promised for the ensuing session. The financial statement shows a balance of over £10 in hand. Several new features are contemplated, including the formation of a library, prizes for essays, &c. The summer outing will probably be to Taunton Flower Show on August 10th. W. Lavers, Esq., is President, and Mr. F. C. Smale Hon. Sec.

— **DEVON AND EXETER GARDENERS' ASSOCIATION.**—Members of the Devon and Exeter Gardeners' Association held a meeting at the Guildhall on the 5th inst., when Mr. Stoneman, Teacher of Botany at the Exeter Science Schools, read a paper, "*The Coniferae of Dropmore*," on behalf of Mr. Cecil Bartlett of Dropmore. As illustrative of the paper read, a large number of branches were exhibited to show the characteristics of the trees referred to in the essay. A cordial vote of thanks was passed to Mr. Cecil Bartlett for the paper, to Mr. Stoneman for reading it, as also to Mr. Powell for presiding.

— **THE YOUNG GARDENERS OF FALKIRK.**—"A. G." writes:—"It may be interesting to some of your readers to know that the young gardeners of Falkirk and district formed themselves into an association for the purpose of petitioning their employers for a half-holiday on the Saturday afternoon. Most of the gentlemen conceded the holiday, but some have not as yet sent any reply to the circular that was sent to them on the subject. It is now proposed to form a Gardeners' Mutual Improvement Society in the district." [A head gardener to whom we mentioned the action and proposals above referred to replied:—"I think it is time an improvement society was established at Falkirk, and I hope my assistants have more respect for me than to run off enjoying themselves and leave me to do the necessary Saturday afternoon's work."]

— **THE WEATHER AT SWANMORE.**—The heat during the day has gradually increased through the present week. On the 7th inst. 76° were registered in the shade, or 7° in excess of last year, and 24° in excess of the temperature on the same day in 1891. The wealth of fruit blossom is as yet apparently unharmed; the petals from the Plum trees are whitening the ground. Pears and Cherries are fully expanded. The first Apple—Irish Peach—has opened its blossoms, followed by Lord Grosvenor. As yet we have not experienced frost, nor has any rain fallen since March 3rd. In strong land farming operations are much hindered owing to the want of moisture, and unless rain comes soon the hay crop will be light. Last year we had only 0.03 inch of rain from March 15th to April 13th, a long spell of drought.—E. M.

— **FRUIT FROM AUSTRALIA.**—A consignment of fruit from Victoria was opened on Tuesday morning in the Potato Market, Covent Garden, and was found to consist of Plums, Grapes, Pears, Tomatoes, and Apples. The Apples, magnificent in size, form, and colour, had travelled splendidly, and found a ready sale at a good price. The softer fruits had not fared so well, many of the Pears having lost their firmness, while few of the Plums had retained their freshness. Some of the Grapes were fresh with the bloom on them, but some of the contents of the boxes were quite soft and discoloured. The Tomatoes were pronounced to be first-rate in quality by a well-known authority in Covent Garden Market, and of these about a third were sound and fresh. The fruit left Melbourne on the 25th of February, having been stored in the cooling chambers of the ss. "*Britannia*" on the previous day.

— **THE WEATHER LAST MONTH.**—March was remarkable for the small quantity of rain during the month, the last fourteen days being quite dry; also for the large amount of sunshine, the seven consecutive days (19th to 25th) being quite clear, and not a cloud seen during the whole time. We had a little snow on 16th and 17th. The wind was in a westerly direction twenty-two days, but was only rough on one day, the 1st. The total rainfall was 0.24 inch, which fell on seven days, and is 1.21 inch below the average for the month, the greatest daily fall being 0.08 inch on the 1st. The barometer was highest (30.48) at 9 A.M. on 25th, lowest (29.42) at noon on 1st. Temperature varied much; highest in the shade was 67° on 30th, lowest 20° on 19th; lowest on grass, 13° on 19th and 29th; mean daily maximum, 57.96°; mean daily minimum, 30.19°; mean temperature of the month, 45.19°. Mean relative humidity (saturation = 100) taken at 9 A.M. was 76.29. The garden spring ran 24 gallons per minute on the 31st. The frost has been very severe at times, but the fruit blossom in the open here is not enough advanced to be damaged, and the prospects for all kinds are very good.—W. H. DIVERS, *Ketton Hall Gardens, Stamford.*



— A CONTEST IN FLORAL ARRANGEMENTS AT CHICAGO.—One of Mr. Thorpe's latest plans for the horticultural department of the World's Fair is for a contest in floral arrangement during the month of August. Of course the difficulties in making the contest truly national in character will be numerous, but he believes they can all be overcome. The month of August has been selected mainly because at that time so many florists will be sure to visit the Fair, and can take part without making a special trip for the purpose. Mr. Thorpe believes that many of the eastern florists will be sufficiently interested to have their material sent on from the east for the purpose, but all can enter and use material obtained in Chicago or within easy reach. Certainly such an important department of the trade as the arrangement of flowers should not be entirely omitted from a display intended to represent the progress of floriculture, and such contests always prove great attractions to the people. Mr. Thorpe believes that the rules to govern such a contest should be largely devised by those who will probably take part.—(*American Florist*.)

— LATE QUEEN BROCCOLI.—This fine variety is certainly worthy of extended cultivation, for according to my experience it is one of the hardest of Broccoli; and, moreover, is ready for use at a time when small white heads are particularly acceptable—viz., from the middle of April till June. It is the only variety which has wintered well with us this season. During severe winters thousands of midseason Broccoli are killed, and under the circumstances it is well to consider if it is desirable to plant midseason varieties so largely as heretofore, seeing how very precarious a crop they have been during the last few years. No mistake can, however, be made by having good breadths of Late Queen, for should the following winter prove mild this variety will be invaluable when the bulk of others are over. If, on the other hand, a severe winter is experienced, Late Queen comes to the rescue again by reason of its thorough hardiness. This is well worth bearing in mind now that the time has arrived for sowing the main batches of vegetables for winter and spring supply. I find the last week in April is early enough to sow this variety. The plants resulting therefrom are then ready to plant between rows of Potatoes at a convenient time—viz., after the haulm have completed their growth.—H. DUNKIN.

— SEED POTATOES.—I have often had occasion to remark as to the exceeding baldness of sorts of Potatoes for seed purposes offered in some provincial districts. Still further, how much residents in such localities owe to those more enterprising traders who distribute their Potato lists broadcast, as it is only through such energy that many varieties of Potatoes would get heard of at all. I have been looking through the lists of seed Potatoes that are issued in a considerable outlying town, and also taken stock of what is offered in seed shops or other ways, and have been surprised at the very meagre fare. One Ashleaf does duty for Myatt's, and Veitch's Early Rose does also for Early Vermont. Then there is Beauty of Hebron and its late ally, White Elephant, also Magnum Bonum, Schoolmaster, Imperator, and sometimes The Bruce. This is a fair representation of the sorts of Potatoes open to the grower whether rich or poor to select from. It is all very well to aver, as some critics who are wondrously wise will, that we have far too many sorts of Potatoes; but who complains of too many? In such a case as this, where is the enterprise of the local trader who thus drones on from year to year and makes little or no addition to such a poor stock? What wonder if the local trade is in a muddled and meagre condition. But whilst having no sympathy with such traders one may reasonably have some with that portion of the public who may not purchase of sorts new varied and good they would desire to do, but under ordinary local conditions can only of sorts they do not want. Even when they meet, as sometimes they do, with a list of sorts that affords ample selection, their wants are so moderate that they hesitate to order, and hesitating are lost. Did but a few combine to order, or would but one local trader resolve to invest in the purchase of some of the finer varieties for sale, great good to the Potato seed trade might be effected.—A. D.

## REVIEWS OF BOOKS.

*The Garden Manual.* E. H. May, 171, Fleet Street.

WE can, with the utmost propriety, allude to the re-issue of this work, as it embodies the teaching of practical men who have contributed to the pages of this Journal and its predecessor, the *Cottage Gardener*. Some of the writers whose work is cherished have been called away, while others happily remain. The teaching in the Manual is the outcome of ripe experience, and covers a wide field of practice in the various departments of gardening. It may be said that practically all kinds

of fruits, flowers, vegetables, and herbs are included, and their cultivation described. This applies to those which are grown both under glass or in the open air; in fact, we may say the *Garden Manual* provides information for everybody who needs it on the management of gardens and the cultivation of crops, and it also tells the readers in advertisements where they may obtain what they require. The work consists of 256 pages of closely printed matter, and though nearly 50,000 copies have been sold Mr. May says he wishes to sell more because it is such a useful handbook for amateurs, and contains more information for 1s. 6d. (1s. 9d. post free) than is to be found in any work that has been issued from the gardening press.

*The Wild Rabbit.* By J. SIMPSON. William Blackwood & Sons, Edinburgh and London.

WE direct attention to this new book, not because it has any connection with gardening, but because it is written by a gardener whose duties, however, extend far beyond the garden walls. Mr. Simpson is a believer in rabbit warrens, and is convinced that with good management they may be made to pay. They used to pay very well in England, and it may be presumed that rabbit rearing pays elsewhere, or hundreds of tons of them would not be imported. The author points out why in one important respect rabbit warrens have failed—starved land—and his remarks on the value of gas lime and salt for pastures are worthy of attention.

The late Professor Lindley, the eminent plant physiologist, wrote that many years ago "the pastures of Cheshire, exhausted by continual removal of grass by the animals that grazed upon them, recover their fertility when dressed with bones." Now this exhaustion is exactly what takes place in rabbit warrens from which large numbers of rabbits are removed annually and no bones or other manure ever put back in return. The Cheshire dairymen were quite right in concluding, in their common-sense way, that in putting bones on their pastures they would be putting back what their cattle took out of them; but, as Dr. Lindley showed, it was the combination of phosphoric acid and lime in the bones, otherwise phosphate of lime, of which the bones of animals are mainly formed, that restored the fertility of the pastures. "Hence arose the manufacture of superphosphate of lime by Mr. Lawes, now so indispensable to cultivators."

What the rabbit-warren farmer needs to realise is that the flesh, bones, and blood of a rabbit consist of from 55 to 60 per cent. of phosphate of lime; that the pasture on which it feeds consists in large part of the same elements; that the rabbit gets its nourishment out of the grass that it eats; that the grass gets the phosphates out of the soil; and that when the soil becomes exhausted of these, both pasture and rabbits must of course perish. This is the secret of the whole matter.

Of course, it is not needful to supply bones direct to rabbit warrens in all circumstances. In very many cases warrens are laid out on old pasture, where the food exists if only it were unlocked. We have applied no bones or phosphates yet, but only gas lime and salt; but we had a thickly matted old pasture full of fibre, humus, rabbit droppings, &c., to begin with, and which will take a good deal of decomposing and converting into plant food. Much of the pasture near the wood, where most rabbits were, was also what would be called tainted or rabbit-sick. This of course indicated lime, and as gas lime is just as good for grass as fresh lime, if not better, it was used pretty freely on the worst spots—put on in November, the right time—followed by a sprinkling of salt in spring. The lime acts upon the droppings and humus of the turf, converting both into the food of plants, aided by the salt, and both are energetic purifiers of the ground even on a limestone soil, which ours is not. The effect was at once apparent, by the improvement in the pasture and the eagerness with which the dressed parts were attacked by the rabbits. Salt, as is well known, has a marked influence on the health of animals, and promotes fertility. So noticeable was this, that a large quantity of gas lime and salt was also applied to the old deer park with the same results, the deer patronising the dressed land the whole summer.

The prejudice against gas lime—a prejudice entertained even by some noted and professedly scientific agriculturists—arises from ignorance. Dr. Voelcker, chemist to the Royal Agricultural Society, has pronounced emphatically in its favour, and especially recommends it for permanent pasture deficient in lime. But more is to be said about it than this. Gas lime is supposed to be obnoxious to animals on account of its smell; but that is not the case with cattle, horses, or rabbits. Gas tar will stink rabbits out of their holes, and is used for that purpose; but gas lime they will burrow in, and will live and breed in a fresh heap of it, as they have done here. They simply revel in it, and are on to it as soon as it is spread. Horses I have seen rubbing their noses in it with apparent pleasure, and cattle have no objection whatever to its presence. It should be well pulverised with a mallet or spade, and spread evenly on the pasture, but should never be applied after the tender grass begins to grow in spring, as it burns it off. Salt should be given freely to almost all pastures, especially when far from the sea. "The effects of salt," says Dr. Lindley, "are not to force plants and give them a dark colour like ammonia, but to consolidate their tissues and render them crisp as well as succulent," and no doubt more nourishing.

A thing happened here during the past summer worth mentioning in connection with this subject. As in most places, the young pheasants here have suffered more or less from cramp, that disease never being quite absent at any time till this year, when the coops were put down in the warren on a spot recently limed and salted. Last year on the same ground, close by, where no salt or lime had ever been put, cramp was bad; this year it was wholly absent, and similar dressings will be given where the pheasants are to be in future. I merely offer this hint to those whom it may concern.

The above remarks are suggestive and generally useful in their tendency, while the main subject of the work is practically treated in detail by the author. The volume will sustain the fame of the publishers by its excellence in production.



## DEATH OF PROFESSOR DE CANDOLLE.

WE regret to have to announce the death of Professor De Candolle, which took place on Tuesday, the 4th inst., at Geneva.

Alphonse Louis Pierre Pyramus De Candolle was the son of the celebrated botanist, Augustin Pyramus De Candolle, originally Professor of Botany at Montpellier and subsequently at Geneva. His son, the

1866 he was President, and delivered an inaugural address, the subject of which he divided into—I. The Utility of Horticulture to Botany; II. The Utility of Botany to Horticulture; and III. The Beneficial Effects of the Close Relations of Botany and Horticulture. He was a member of the Royal Society, also a member and gold medalist of the Linnean Society of London, and a recipient of the honorary doctor's degree from the Universities of Oxford and Cambridge.

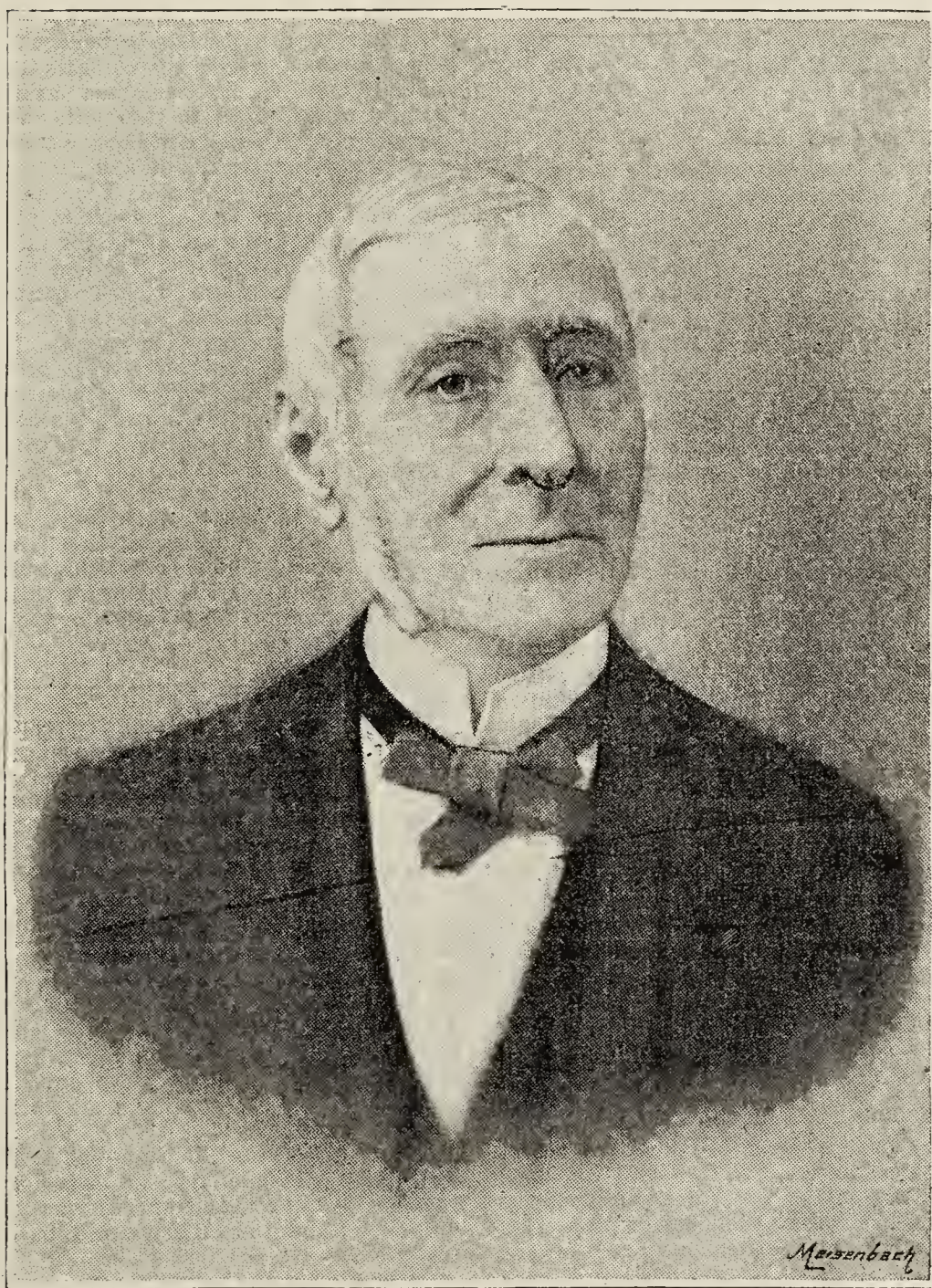


FIG. 57.—ALPHONSE DE CANDOLLE, D.C.L., F.M.R.S.

subject of the present sketch (fig. 57), and who succeeded him in the Botany Chair in the University of Geneva, was born at Paris, October 27th, 1806. After going through a course of study in science and literature he directed his attention to the law, of which faculty he was admitted a doctor in 1829. Eventually he devoted his attention exclusively to botany, and became assistant to his father and afterwards his successor. For eighteen years he was director of the Botanic Garden. He was elected a correspondent of the Institute of France in 1851, and the following year was decorated with the Legion of Honour. At the great Horticultural and Botanical Congress held in London in

In June, 1874, De Candolle was elected a Foreign Member of the Institute, taking the place of Agassiz at his death. Besides completing the "Prodromus," which his father left unfinished in 1841, he was the author of several separate works, of which the chief are "Introduction à l'Étude de la Botanique," in two vols.; "Géographie Botanique Raisonnée," two vols.; "Lois de la Nomenclature Botanique;" "Origine des Plantes Cultivées," and "Constitution dans le Règne Végétal de Groupes Physiologique, Applicable à la Géographie Botanique Ancienne et Moderne." He also edited the Memoires of his father, and in the course of his industrious life published, in addition to the works already



mentioned, a "Monograph on Campanula," "Further Remarks upon Nomenclature," "History of Sciences and Scientists during two Centuries," which has passed through more than one edition, and "Photography; or, the Art of Delineating Vegetable Forms Considered from Various Aspects;" besides contributing largely to the Transactions and Journals of learned societies. He was ably assisted by his son Casimir, and thus three generations have been engaged upon similar studies in systematic botany and the properties and natural affinities of plants.



#### THE VITALITY OF THE N.C.S.

"THE N.C.S. has enough vitality in it to weather the storm, but there must be a good man at the helm." If the writer of the above sentence could be named in this reference, even Mr. Richard Dean might admit his authority—that is, if he admits any authority in the Chrysanthemum world. We believe fully in the vitality of the N.C.S., but all the world knows that the Society has not been increasing in dignity of late, and a loss of dignity, if permitted on the part of any national society, means a loss of strength. Of that there can be no doubt whatever. A flash and dash policy never lasts long, and not until small parochial methods are departed from can any society become truly great and command universal respect. A meeting will have been held before these lines are made public that will, it is hoped, place the National Chrysanthemum Society on a strong basis, and enhance its influence and prosperity.

#### NEW AMERICAN CHRYSANTHEMUMS.

MR. T. H. SPAULDING of transatlantic Chrysanthemum repute has recently published a somewhat lengthy list of novelties, comprising nearly all the new seedlings distributed by the leading American raisers, besides some introduced into that country direct from Japan. Last year's English and French varieties are also included, but omitting these we find a total of 142 new Chrysanthemums offered for the first time as new American sorts. The prices vary from 2s. to 6s. apiece for single plants, and we may well exclaim Verily our American cousins have caught the "Mum" fever!—P.

#### EARLY FLOWERING CHRYSANTHEMUMS.

TWO years ago M. Simon Delaux announced the distribution of a large collection of dwarf early-flowered varieties, numbering in all 125 sorts, mainly of the Japanese section. Last year a further addition was made by him, but they do not appear to have justified the eulogiums which were pronounced upon them. This year M. Delaux promises to send us a fresh instalment, comprising fifty varieties, and another of his fellow countrymen has also entered the field with a list of twelve. The lovers of outdoor Chrysanthemums will have ample opportunities for the weeding-out process so long necessary with the older November flowering kinds from the other side of the Channel.—P.

#### UGLY CHRYSANTHEMUM NAMES.

THERE will, as usual, be a very large number of new Chrysanthemums sent out this spring by foreign growers, but the total imported into England will probably be less than in the past, for our introducers are beginning to get weary of the task, now that such a large proportion of sterling novelties reach us from America and from our own growers. Illustrative of my heading I select the following from the French catalogues:—Duminy Haré d'Olphove, Messidorine Vauvel, Billecart Charles, Sr. de Jules Pourbaix, René Deutz, Krug Paul, Paul Valade, Le Vidame de Moirax, Léon Faulguier, Vaucanson, Altair, Bailly de Sufren, Fuset Aublet, Chanoine Eysséris, M. Hovyn de Tranchère. The list might be lengthened, but the instances quoted are sufficient for the purpose of showing how easily Chrysanthemum nomenclature may become confused.—C. H. P.

#### HAIRY CHRYSANTHEMUMS.

ADVERTING to a short article which appeared in the *Journal of Horticulture* a few weeks ago, it may be of interest to record that the new American and Continental lists of seedling Chrysanthemums for 1893 contain between sixty and seventy varieties of distinctly hairy character, without counting those which possess this peculiarity in a slight degree. Among the French raisers the names of M. de Reydeliet, M. Simon Delaux, M. Crozy, M. Louis Lacroix, and M. Sautel are chiefly conspicuous for offering novelties in this section, while the varieties sent out by American houses are contributed mainly by Mr. Spaulding, Messrs. Pitcher & Manda, and Messrs. Nathan Smith and Son.

A new departure in the hairy section is about to be made, for I learn that one grower on the Continent promises us several, which, instead of merely having short, glandular, hairy growths on the backs of the petals, are noteworthy as having hairy petals the whole length, similar,

perhaps, to what we once knew as thread-petalled varieties, but much finer. Mrs. Alpheus Hardy and Louis Boehmer seem to have played an important part in the operations of the raisers, although introductions direct from Japan are announced. We may, therefore, look forward to the next Chrysanthemum season with considerable interest, and those who favour the most modern section of the popular autumn flower will, no doubt, keep a keen look-out for the most promising varieties of these new but doubtful beauties.

English nurserymen have at present but two terms to describe them—viz., hairy varieties or hirsute varieties; but our French friends seem not to be limited in their vocabulary. I find in the French catalogues the following expressions plentifully used, which seem worthy of repetition for the benefit of those desirous of extending their knowledge of that language, Chrysanthèmes à barbe, à plume d'autruche, à poils, barbus, ciliés, duveteux, velus, chevelus, plumeux, and poilus.—C. H. P.

#### JUDGING CUT BLOOMS.

I AGREE with Mr. Lambert (page 278) that an exhibitor gains points when he can stage difficult varieties like Mrs. A. Hardy, Golden Dragon, and many others, but this phase has nothing to do with the principle of judging that I object to, it is quite outside of it. Surely it should make no difference to a judge whether a stand is placed near another or not in determining the merits of any particular collection, or even individual blooms. If a judge knows the quality of any individual variety it matters little to him where it is placed. A practical man does not require other blooms to guide his mind. Surely a judge can discriminate between a 4-point flower and another 4½ points without fetching the former for comparison; if he cannot he is not competent to award prizes.

Has Mr. Lambert ever awarded the premier prize to a bloom of Refulgens where Lord Alcester in prime condition was competing? If he has his experience differs from that of others. If Refulgens cannot beat the variety quoted in the contest for the premier bloom why should it be placed ahead of it in a collection simply because it happens to be of another colour?

Dealing with the matter of 6-point blooms, Mr. Lambert (page 278) does not put the matter quite fair regarding what he previously said on page 240 when speaking of the premier bloom selection. He there infers that many blooms in a show had gained six points, whereas in his last communication he shifts this inference by saying only one in five, which renders the selection of the premier bloom an easy matter on my method of judging.—SADOC.

#### ROYAL HORTICULTURAL SOCIETY.

APRIL 11TH.

THERE was a very attractive display in the Drill Hall on the present occasion, and the exhibits were thoroughly well varied in character—hardy flowers, indoor plants, and Orchids all contributing their quota, while fruit and vegetables were also represented.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair), with Dr. Hogg, Messrs. G. Bunyard, J. Cheal, G. Forbes, G. Woodward, J. Smith, H. Balderson, G. Wythes, W. Bates, G. Sage, F. Q. Lane, A. J. Laing, A. Dean, Harrison Weir, and J. Wright.

Several varieties of Apples were placed on the table by Mr. Barron. They were grown in pots under glass last year at Chiswick, and exhibited to show that the fruits have kept better than those of the same varieties grown in the open. The specimens were very good indeed, pale, with a wax-like transparency, much resembling Tasmanian fruits.

Mr. G. Woodward, Barham Court, Maidstone, sent a dish of Apples named Roy d'Angleterre; good-sized symmetrical fruits, green, with a russet apex, firm, and of fair quality, but probably past their best condition; and the variety would be better represented earlier in the season.

A month ago the beautiful orange-yellow Apple *Jacquin* was exhibited by Mr. Rivers, and the fruits were preserved to test their keeping properties. They were again examined by the Committee, and were quite sound. This is one of the most distinct Apples that has been seen for a long time. The fruits are medium-sized, conical, clear uniform orange-yellow, and the flesh tender, juicy, and agreeably flavoured. The specimens were grown in the open air. A first-class certificate was unanimously awarded, and *Jacquin* will probably become a favourite Apple for dessert purposes.

Mr. F. Q. Lane sent a dish of Lane's Prince Albert Apples, splendid fruits, as firm as when gathered, and a vote of thanks was accorded.

Royal Sovereign Strawberry plants in pots were exhibited by Mr. T. Laxton, Bedford. This variety was certificated last year; the fruits were very large, and of excellent quality (cultural commendation).

Mr. Wythes, Syon House Gardens, sent a box of Strawberries, a seedling from Keens' Seedling, excellent fruits of good colour; good Black Hamburgh Grapes, and St. John's Figs, also a collection of vegetables including Sharpe's Victor Potatoes, Dwarf Kidney Beans, Asparagus, Seakale, and other kinds in season. A silver Banksian medal was unanimously recommended.

The first Vegetable Marrows of the season were sent by Mr. W. C. Leach from Albury Park. The name given was Sutton's Vegetable Marrow, but there were two varieties on the dish. The fruits were 6 inches long, and of good table quality, but no award was made.



Very fine samples of *Veitch's Golden Queen Cabbage Lettuce* were exhibited by Mr. T. W. Bond, gardener to C. Ingram, Esq., Elstead House, Godalming. They were of full size, firm, tender, and pleasing in colour. The opinion was general that no Lettuces, from France or elsewhere, sold in Covent Garden at the present time equalled these specimens, and a first-class certificate was awarded for Golden Queen as a forcing variety. The seeds were sown on January 2nd, and the plants were admirably grown by Mr. Bond.

Fifteen dishes of Apples were sent for the last meeting by Mr. W. Divers, The Gardens, Wicton House, Maidstone, but did not arrive in time, and had suffered by the delay (vote of thanks).

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair), Messrs. H. B. May, H. Herbst, R. Dean, G. Stevens, F. Bause, J. Jennings, R. B. Lowe, W. C. Leach, C. Jeffries, W. Bain, G. Gordon, C. E. Shea, H. H. D'Ombraun, J. D. Pawle, C. Noble, T. Baines, J. Fraser, H. Turner, E. Mawley, G. Paul, and C. E. Pearson.

J. C. Tasker, Esq., Brentwood (gardener, Mr. Perry), sent a group of Azaleas, Spiræas, and Roses, the latter including the charming Teas Princess of Wales, The Bride, and Innocente Pirola, in admirable condition (silver Flora medal). Messrs. H. Lane & Sons, Berkhamsted, contributed baskets of the Polyantha Roses Gloire des Polyanthas, Perle d'Or, and Anna Maria de Montravel, also of the magnificent hardy Azalea Anthony Koster, with its huge trusses of yellow, orange suffused flowers (silver Banksian medal). Messrs. E. D. Shuttleworth & Co. sent a group of miscellaneous plants, chiefly Cyads, all healthy and clean, also a bright collection of hardy flowers (bronze Banksian medal). Messrs. J. Laing & Sons contributed a mixed group of flowering and foliage plants, in which tree Pæonies, Clivias, Azaleas, and Lilacs showed up prominently. The group was very tastefully arranged (silver-gilt Banksian medal). Mr. T. S. Ware had a somewhat extensive and well varied collection of Daffodils, also a few Irises, including the charming Saari nazarensis and Helenæ (silver-gilt Banksian medal). Messrs. B. S. Williams & Son had a group of flowering plants which comprised Clivias, Amaryllis, and a fine plant of Rhododendron McNabbiana, which last year was at its best at the end of May (silver Flora medal). Messrs. Hugh Low & Co. sent a large and diversified collection of stove and greenhouse plants, chiefly hardwooded, all healthy and beautifully bloomed. Their exhibits of this class are so strikingly attractive that the plants can hardly fail to be popularised (silver-gilt Flora medal). Messrs. Veitch & Sons were represented by a small collection of seedling Daffodils, and also by several baskets of shrubs. Cydonia Maulci, C. japonica rosca, C. j. atropurpurea, C. j. alba, C. j. Moerlezi, Andromeda speciosa cassinefolia, Cerasus Watereri (very beautiful), and Olearia Gunni (silver Banksian medal).

The Rev. G. H. Engleheart, Andover, sent several seedling Daffodils, such as a cross between Horsefieldi and poeticus, this having resulted merely in the shortening of the crown. The first prize for six varieties of these flowers went to the Rev. G. P. Haydon, Doneaster, and the second to J. W. Melles, Esq., Chingford. The Rev. S. Eugene Bourne was first with nine, and A. Kingsmill, Esq., second. Mr. Bourne also won with a collection of Daffodils, Mr. Kingsmill second, Mr. Haydon third, and Mr. Miller fourth. Mr. J. W. Wilson exhibited a small collection of Daffodils, as did the Rev. N. J. Miller. Two beautiful boxes of Roses were sent by Mr. Frank Cant, and they constituted a really remarkable exhibit for the time of year, the blooms being delightfully fresh and well coloured. Mrs. John Laing, The Bride, Vicomtesse Folkestone, Ethel Brownlow (superb), and Suzanne Marie Rodocanachi were exceptionally good (silver Flora medal). Three beautiful baskets of alpine and other plants came from the Guildford Hardy Plant Nursery. Amongst them were the rare and troublesome Eritrichium nanum, Myosotis Reehsteineri, Draba Deceana, Saxifraga Stanfieldi, S. tenella, and Antennaria dioica (silver Flora medal).

Messrs. Cannell & Sons sent some rich and fragrant masses of Wall-flowers, such as Cannell's Tall Yellow, Blood Red, Harbinger, Graham's Yellow, Double German, and Cannell's Dark Maroon; also a basket of Primrose Harbinger (vote of thanks). Messrs. Cutbush & Son had a miscellaneous group of indoor plants, in which well flowered Ericas, Callas, Clanthus, and Pæonies were prominent (silver Flora medal). Messrs. J. Peed & Son had a mixed group of flowering and foliage plants, composed as usual of healthy and well grown material (bronze Banksian medal). Martin R. Smith, Esq. (gardener, Mr. Black), sent several seedling Malmaison Carnations, such as Sir Evelyn Wood, Lord Wolseley, and Princess May. The latter is referred to below. Mr. Edward Morse sent Convallaria majalis grandiflora, Fortin's variety (vote of thanks); and Miss Mellish, Hodsock Priory, some fine seedling Daffodils. Mr. W. C. Leach sent Philadelphus grandiflorus and Salvia gesneræflora. G. F. Wilson, Esq., sent several varieties of Gentiana acaulis, marking many divergencies of colour. J. T. Bennett-Poë, Esq., received a vote of thanks for Richardia aurata—Deleuil (R. albo-maculata × R. hastata) with pale primrose flowers and marbled foliage.

Messrs. P. Barr & Son were represented by one of their characteristic collections of Daffodils, comprising an enormous amount of material, and many interesting forms (silver-gilt Banksian medal). Messrs. Paul and Son, Cheshunt, had a charming group of hardy flowers and shrubs, in which Cytisus præcox and C. scoparia Andream were conspicuous as weeping standards (silver Flora medal). Mr. G. May, Teldington, had a large group of a fine new tree Carnation named Uriah Pike, flowers with full rich Clove fragrance (silver Banksian medal).

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); Messrs. J. O'Brien, De B. Crawshaw, H. M. Pollett, E. Hill, Hugh Low,

Jas. Douglas, R. B. White, C. J. Lucas, J. T. Gabriel, H. Williams, E. Handley, S. Courtauld, H. Ballantine, and Dr. Masters.

The labours of the Orchid Committee were not so heavy as usual. Messrs. Hugh Low & Co. sent a very bright little group containing no novelties but brilliant with bloom (silver Banksian medal). Messrs. Veitch & Son sent Dendrobium Niobe (see below), Cymbidium × eburneo Lowianum, and Cypripedium × Clymene. The Duke of Northumberland (gardener, Mr. Wythes) sent a plant of Miltonia stellata and Cyrtopodium punctatum splendens (see below). The Rev. E. Handley sent Odontoglossum Andersonianum and Cattleya Laurenciana Omala. Messrs. Sander & Co. contributed a small but interesting group of Orchids, amongst which were Dendrobium Schröderæ, Odontoglossum Kranzlini, Cattleya Schröderæ, and a fine variety of Odontoglossum Pescatorei. The Right Hon. J. Chamberlain (grower, Mr. Burberry) sent Cattleya guatemalensis (see awards), Dendrobium Nestor, and Cattleya Trianae pallida. Messrs. B. S. Williams & Son had a large and brilliant group full of bloom (silver Flora medal). Messrs. W. L. Lewis & Co. also had a charming group not containing any special forms, but very attractive for all that (silver Banksian medal).

#### CERTIFICATES AND AWARDS.

*Carnation Princess May* (Martin R. Smith, Esq.).—A fine seedling Malmaison variety with "Warocqué" blood. It is dwarf, with very large flowers of a rich crimson, and very sweet (award of merit).

*Eucharis Lowi* (Hugh Low & Co.).—A beautiful variety, pure white, with greenish-yellow stamens, the segments somewhat incurved, giving it a distinct appearance (award of merit).

*Bougainvillea spectabilis* (Captain Oldfield).—Remarkable for the rich colouring of the bracts, which were exceptionally bright, and would have looked still finer under sunlight. They were of a brilliant magenta (first-class certificate).

*Carnation Uriah Pike* (G. May).—A tree variety with the true Clove perfume, colour rich purplish crimson. The plant is of good habit, and the bloom does not split its calyx (award of merit).

*Pyrus cardinalia* (A. Waterer).—Apparently a large and fine variety of japonica. The blooms are 2½ to 3 inches across, rich scarlet and densely clothe the stem (award of merit).

*Azalea Anthony Koster* (H. Lane & Son).—A magnificent variety of the hardy section with huge trusses of bloom. The individual flowers are large and the plants smothered in flowers. Colour clear yellow suffused with orange (first-class certificate).

*Iris Saari nazarensis* (T. S. Ware).—A beautiful variety growing about 9 inches high, the standards transparent white, the falls white dotted thickly with brown, and with a large purplish patch in the centre (award of merit).

*Sarracenia Mandaiana* (Pitcher & Manda).—A natural hybrid between flava rubra and Drummondii with magnificent green pitchers (first-class certificate).

*Canna Progression* (Paul & Son, Cheshunt).—A beautiful variety with large yellow flowers, thickly dotted with brownish red (award of merit).

*Dendrobium Niobe* (J. Veitch & Sons).—A cross between D. nobile (pollen parent) and D. tortile. It is of vigorous growth and free blooming. The flowers are much larger than those of nobile, lip creamy white tipped with magenta, throat purplish magenta, sepals and petals brilliant rosy mauve (award of merit).

*Cyrtopodium punctatum splendens* (the Duke of Northumberland).—Three splendid pieces, all profusely flowered. The colour is a combination of brown and yellow, the lip being yellow with brown blotches, the upturned wings brown, the petals clear yellow, and the sepals greenish yellow blotched with brown (award of merit).

*Cattleya guatemalensis* (Right Hon. J. Chamberlain).—A small flowered sort of peculiar colouring, the sepals being buff with a tinge of rose, the petals suffused with rose, and the narrow lip rich rosy cerise. It is an old plant (award of merit).

*Odontoglossum hybrid (?) Crawshaw's variety* (De B. Crawshaw, Esq.).—The nomenclature of this was not decided. It has marked crispum characters, and is white, heavily blotched with brown; a beautiful form (award of merit).

#### THE LECTURE.

It was announced in the programme that a lecture on "Orchid Life in New Guiana," by Mr. Everard F. im Thurn would be delivered at the afternoon meeting held under the auspices of the Royal Horticultural Society; but a letter was read by the Rev. W. Wilks indicating that Mr. im Thurn was on his way to Barbadoes, and had not been able to prepare the essay previous to embarking. He promised, however, that the paper should be forthcoming, but at the time of the meeting it had not come to hand. As a substitute a paper on the "Antiquity of the Citron in Egypt," by Dr. Bonavia, was read by the Secretary, and this proved of an interesting character.

Dr. Bonavia, on the authority of other authors, in his communication stated that the Citron was cultivated in Upper Egypt in the fourth century A.D., and further remarked that two centuries before that date ancient writers referred to the fruit being sold to poor people. He thought, too, that the Citron was known long before that period, inasmuch as it was figured on a tomb in the temple at Karnak fifteen centuries B.C. As further evidence of its antiquity he had seen a copy of a drawing in which the "finer Citron" is figured. As to the probable source from which the Citron originated, Dr. Bonavia said it had probably been brought by traders into Egypt, but he had come to the conclusion that all varieties originated in Southern China. Ancient Greek, Roman, and Arab writers had, he said, referred to the medicinal



properties of the Citron, and in one instance he could corroborate the views set forth in this respect.

Phillip Crowley, Esq., who occupied the chair, and whom the Rev. W. Wilks described as the best Citron grower in England, briefly alluded to his method of culture, and remarked that he had grown Citrons successfully for several years. The fruit made excellent preserves, far superior to the ordinary marmalade, and he thought that the Citron should be more extensively grown under glass in this country.

Sir John Llewelyn, Bart., alluded historically to the trees in the Margam orangery, in Glamorganshire, and made a suggestion to the effect that although ancient figures of the Citron were found in Egypt it did not necessarily follow that the trees were cultivated at those periods in that country. Fruits, he said, may have been brought into the country from other lands and drawings made of them.

### PRIMULA CALYCINA.

THIS *Primula* (fig 58) has long been known in gardens, where it is often confounded with *P. Wulfeniana*, a totally different plant, and from which it is easily distinguished, even without the aid of flowers, by its longer and very irregularly margined leaves. It grows readily enough on the rockery in almost any position, but unless in exposed situations is rather a shy flowerer, and some can only manage to flower it by giving it a good roasting during the summer months, meanwhile supplying water very sparingly. It seems to prefer being wedged between hard pieces of granite in a rich stiffish soil.

It forms rosettes of long ovate-lanceolate leaves, of a half-weathered green colour, perfectly glabrous and shining, with a curiously wavy margin. The flowers are large, of a beautiful clear lilac, generally three or four together on short stalks, at the base of which are long linear bracts. Calyx about an inch long, with narrow bluntish sepals. It is a native of the southern Alps, and flowers generally in May and June.

## SPRING FLOWER SHOWS.

### BIRMINGHAM.—APRIL 5TH AND 6TH.

THE thirteenth annual Exhibition was held in the Town Hall on the 5th and 6th inst., and the Judges, exhibitors, and visitors pronounced it to be the best spring Show yet held at Birmingham. It was generally thought, owing to the hot weather experienced for several days, that there would be but a moderate display of Hyacinths and Tulips, but all fears on this score were groundless, and each of the seven classes for these plants were well filled.

In the class for eighteen Hyacinths Mr. J. Palmer, gardener to Wm. Bown, Esq., was first, and among these were fine examples of King of the Blues, Czar Peter, and Lord Macaulay. Mr. W. H. Dyer, gardener to Mrs. Marigold, was second, showing very fine specimens of King of the Blues and Koh-i-noor. There were five entries in this class. For twelve Hyacinths there were six competitors. First, Mr. John Priest, gardener to A. W. Hulse, Esq., with Von Schiller, Blondin, King of the Blues, Grande Maître, Mont Blanc, and Koh-i-noor. Second, Mr. T. Beasley, gardener to N. Thwaites, Esq. For six Hyacinths Mr. Hulse was again first and Mrs. Marigold second; there were six exhibitors in this class.

The Tulips throughout were well grown. For six pots of single Tulips, five roots in a pot, Mrs. Marigold was first, the White Joost Van Vondel, Ophir d'Or, Proserpine, Vermillion Brilliant, Joost Van Vondel, and Keizers Kroon, all being very fine. Second, N. Thwaites, Esq.

Lily of the Valley in moderate sized pots were plentiful and good, and there were large handsome specimens of *Dielytras*, *Spiræas*, *Deutzias*, and *Azalea mollis*. The specimens of *Azalea indica* were unusually fine and formed a marked feature. For six specimens Mr. P. McGregor, gardener to Mrs. Grice, Harborne, was first; W. Bown, Esq., second; and Mr. Cryer, gardener to J. A. Kenrick, Esq., Berrow Court, third. For three specimen Azaleas Mr. L. Fewkes, gardener to T. Clayton, Esq., Castle Bromwich, was first; Mr. Brasiere, gardener to Sir Thomas Martineau, second; and W. Bown, Esq., third. For six stove and greenhouse plants in flower, Sir Thomas Martineau was first with some fine specimens, including *Pimelea spectabilis* and a grand *Hydrangea Thomas Hogg* nearly 3 feet in diameter. Some remarkably fine pyramidal specimens of *Genista fragrans* were shown, ranging from 4 to 6 feet in height, and well flowered; J. B. Manley, Esq., took the first prize.

Prizes were offered for a group of Orchids, arranged with Ferns or foliage plants, in a space not exceeding 40 square feet, and two fine collections were staged. Mr. Burberry, Orchid grower to the Right Hon. Joseph Chamberlain, M.P., Highbury, staged a very fine group, which obtained the first prize. An artificial tree was erected, and the Orchids so arranged as to show the manner in which some of the species grow in other countries. Amongst the Orchids in this group were a very fine plant of *Lælia anceps grandiflora* (Highbury variety); *L. anceps Williamsi*, *Lycaste Skinneri alba*, *Cattleya Mendeli*, *C. Schrederi*, *C. Trianae* (Archduchess variety), and *C. Trianae pallida*; *Dendrobium luteolum*, *D. nobile Cooksoni*, and *D. nobile giganteum*; *D. suavisimum*, very rich in colour; and *D. lituiflorum*, a lovely species; *Angraecum Sanderianum*, the curious *Restrepia antennifera*, *Chysis*

*bractescens*, and the lovely *Lælia flava*. Second, W. Bown, Esq., with a very pretty group, and in it were some choice kinds.

For six Orchids, *bonâ fide* specimens, Mr. Bown secured first prize, showing fine plants of *Cypripedium villosum aureum*, with forty open blooms; a grand variety of *Cymbidium Lowianum*, with eighty open flowers; *Lycaste Skinneri*, *Dendrobium Wardianum*, *Cattleya Lawrenceana*, very rich in colour, and *Dendrobium Ainsworthi*, profusely flowered. The Right Hon. Joseph Chamberlain was second. For three Orchids the Right Hon. Joseph Chamberlain was first with a very large pan of *Cœlogyne cristata*, *Dendrobium thyrsoflorum* in a small pot and with nine large racemes, and *Dendrobium Falconeri*. For a single specimen Orchid Mr. W. Bown was first with a superb plant of *Cymbidium eburneum*, with forty spikes of flowers. Second, the Right Hon. J. Chamberlain with a large *Sobralia macrantha*. Third, J. H. Kenneth, Esq., with a very fine *Dendrobium nobile*.

Some pretty groups of plants were staged in competition, J. N. Kenrick, Esq., being first, Mrs. Marigold second, and Sir Thomas Martineau third; and two extra prizes were also awarded. Messrs. Pope & Sons, nurserymen, &c., were first for a ballroom bouquet in the open class. Messrs. Thomson & Co., nursery and seedsmen, gave liberal special prizes for eighteen Hyacinths, and there were nine competitors. Mr. John Priest, gardener to A. W. Hulse, Esq., was first; N. Thwaites, Esq., second; Mrs. Marigold third, and Sir Thomas Martineau fourth. Messrs. Thomson & Co. also offered special prizes for twelve pots of Tulips, and the exhibits were of a very satisfactory character. First, Mrs. Marigold; second, N. Thwaites, Esq.; third, A. W. Hulse, Esq. Messrs. Thomson & Co. and Messrs. Sutton & Sons also gave special prizes for their strains of Cinerarias, and the latter firm for their superb strain of Cyclamen. Messrs. R. Smith & Co., Worcester, offered special prizes for twelve *Lilium Harrisii*; Messrs. Webb & Sons for Cinerarias; Messrs. Pope & Sons for specimens of *Hydrangea Thomas Hogg*; and Mr. R. Sydenham, Tenby Street, for twelve pots of Narcissus, Mr. A. W. Hulse being first, Mr. N. Thwaites second, and Mr. G. H. Kenrick third.

The honorary exhibits were numerous, sufficient to make a pretty exhibition by themselves. Messrs. Cutbush & Son, Highgate Nurseries, London, contributed a large group of new double Ghent Azaleas, *Azalea mollis*, new *Imantophyllums*, *Ericas*, and other greenhouse plants. Messrs. Ryder & Co., The Nurseries, Sale, Manchester, sent a large collection of *Primula Sieboldi*. Messrs. Peter Barr & Son, nursery and seedsmen, London, sent a good collection of leading Narcissi, amongst them J. B. M. Camm, Lady Grosvenor, Marchioness of Lorne, M. J. Berkeley, deep golden yellow and very fine; Queen of Spain, Barri conspicua, C. J. Backhouse, Mr. H. J. Elwes, and Minnie Hume, a sweet scented variety. Messrs. Dicksons (Limited), Chester, contributed a group of Narcissi of leading varieties and cut blooms of many interesting plants, such as *Epigæa repens*, *Anemone pulsatilla*, *Muscari botryoides pallida* and *alba*, *Fritillaria meleagris angustifolia*, &c. Messrs. R. Smith & Co., Worcester, staged a large group of Clematis, hardy Azaleas, *Rhododendrons*, Japanese Maples, and other plants.

Messrs. Hewitt & Co., The Nurseries, Solihull, had a tastefully arranged group of plants, including Narcissi, *Ericas*, *Azalea mollis*, the handsome hybrid Ghent Azalea *Daviesiana*, a pure white *Caladium*, and other plants, also some Narcissi and Mignonette in pots. Messrs. Thomson & Co., nurserymen and seedsmen, had a large and admirably arranged group, with a centre of Japanese Maples and *Lilium Harrisii*, and a pretty display of *Azalea mollis*, Lily of the Valley, Narcissi, Palms and various other plants. This firm also exhibited a large and very beautiful floral design, an Irish harp. Messrs. Pope & Sons, nurserymen and seedsmen, contributed eight arrangements of Narcissi, Ferns, and foliage as shower bouquets, one variety in each, and these were very handsome, and were in the centre of a group of plants.

Mr. Robert Sydenham, Tenby Street, staged some fine Hyacinths. There were new varieties amongst them, such as King of Yellows, a handsome variety; Etna, a deep rose, large handsome bells and fine spike, a fine semi-double variety; King of Blues, extra fine; Morena, similar in colour to Norma, but with a much finer spike, and is a great acquisition, but has a tendency to lose its brightness of colour somewhat early; Peter Barr, a lovely purple with white centre; Princess of Wales, a new rich rose-coloured variety and a fine spike. Koh-i-noor was shown very fine indeed, some with spikes nearly a foot in depth; Princess Amelia, resembling Grandeur à Merveille, and when seen fine is a decided acquisition; Duchess of Edinburgh, a pale pink, a very charming variety with a grand spike and well finished top; Cardinal Wiseman, another new variety, like *Fabiola* in colour, but with a bold fine spike, and is fine for exhibition. Pink Perfection is quite a distinct shade of colour, white with a rich lavender shaded pink base. Some fine pots of Tulips were staged with the Hyacinths, including some newer kinds; also some Narcissi, including Queen of Spain, a lovely variety.

### ROYAL CALEDONIAN.—APRIL 5TH AND 6TH.

NEVER since the time the leading Scottish Horticultural Society left the dingy Music Hall in George Street for the spacious, well lighted Waverley Market, has there been brighter weather for a spring Show than there was last week on the above occasion. One naturally expected that so fine a season would have brought out an Exhibition correspondingly exceptional. But there have been better shows held in worse seasons. To the nurserymen of the city who contributed freely much of the success of the Show was due.

Nothing in the building could compare with the charming group of



plants arranged by Messrs. T. Methven & Sons, Prince's Street, Edinburgh. The material was composed of ordinary spring decorative plants, with a few charming light blue Clematis, some *Acer Negundo* variegata and Japanese Maples intermixed. Messrs. Dicksons & Co., Waterloo Place, also contributed a table of fine-foliaged and flowering plants, as likewise did Messrs. Cunningham, Fraser, & Co., Queensferry Street. A bright group composed entirely of *Clivias* was contributed by Messrs. R. B. Laird & Sons, Frederick Street. Messrs. Sander, St. Albans, filled a large table with Orchids, these mostly of *Dendrobium Dalhouseianum*, *Oncidium ampliatum majus*, and *Odontoglossums*. Mr. Thomson, Frederick Street, showed Ghent Azaleas; and Messrs. Laing & Mather, Kelso, blooms of *Souvenir de la Malmaison* and *Germania* Carnations.

The chief prizewinner was Mr. McIntyre, The Glen, Innerleithen, to whom several of the prizes for plants was awarded. Of these the premier honour for a table of plants, 20 feet by 5 feet, was the chief item. Some good Orchids, *Amaryllis*, and *Crotons* were included in this group. The second prize went to Mr. A. Crichton, Liberton; and the third to Mr. G. Wood, Oswald House, Edinburgh. Mr. McIntyre was also first for six Orchids, showing good examples of *Cymbidium Lowianum*, *C. eburneum*, a large mass of *Cœlogyne cristata*, a good *Cypripedium villosum*, *Dendrobium Wardianum*, and *Vanda suavis*. Mr. W. Sharp, Freeland, Perth, was a good second; and Mr. R. Grossart, Broughty Ferry, Dundee, third. For three Orchids, Mr. Curror, Eskbank, was first with good plants of *Dendrobium fimbriatum*, *Cœlogyne cristata*, and *Cymbidium Lowianum*. The prizes for one Orchid were awarded to Messrs. Chaolin, A. Patterson, and D. Wilson.

Azaleas were well represented. The best four Azaleas were staged by Mr. J. Bald, Canaan House, Edinburgh. Of foliage plants Mr. Plenderleith was first for four distinct species, a good *Croton* and a large *Asparagus plumosus* being noteworthy. In the class for four exotic Ferns Mr. Napier, gardener to P. Niel Fraser, Esq., Murrayfield, staged a quartet of fresh good-sized plants. Mr. J. Harvey, gardener to Colonel Trotter, Morton Hall, Liberton, was second. Mr. Napier also secured first places for Filmy Ferns and for three *Adiantums*. *Cyclamens* were good, though all the plants were small. Mr. T. Lunt, Dunblane, was the first for twelve; and Mr. A. Kirk for six plants.

Dutch bulbous plants were not so numerous as in some years, nor were they on the whole so good. For twelve Hyacinths Mr. H. Miller, Bothwell, was first with fairly good spikes, *Von Schiller*, *Moreens*, *Koh-i-Noor*, and *La Grandesse* being the best. Mr. D. McBean, Craighead, Renfrew, was a good second. For eight varieties Mr. C. Carnegie, Gartshore, Kirkintilloch, occupied first place, Mr. J. Pearson, Beechwood, Corstorphine, being second. Tulips were bright but small in bloom. Mr. Pearson showed the best six 9-inch potfuls. Of *Narcissus* nothing special was shown. *Cinerarias* were exhibited in numbers, as likewise were *Deutzias*, *Spiræas*, *Mignonette*, and other seasonable plants.

Of cut flowers the most interesting were those made up into bouquets, buttonholes, and sprays for ladies' personal decoration. Mr. Johnston, Morningside, secured the first prize for a hand bouquet; Mr. J. Fraser, Canaan Park, a like award for a bride's bouquet. Mr. J. Napier, Musselburgh, for six buttonholes, was first; and for a "spray" Mr. Kinmont, Pitlochry, was first. Mr. McIntyre, The Glen, was first for twelve Orchid trusses, Mr. Grossart second, and Mr. Sharp third. Cut stove and greenhouse flowers were also attractive. Mr. Grossart staged the winning twelve, Mr. McIntyre being second, and Mr. Sharp third. Roses were not numerous, and many of the blooms were small. By far the best were those in the stand with which Mr. Parlane, Rosslyn, took first prize for twenty-four blooms. The twelve first prize buds of *Maréchal Niel* staged by Mr. T. Fender, Coltoquy, Crieff, were good. Mr. Pearson, Beechwood, was a close second.

Fruit was represented by a few dishes of Strawberries, four clusters of Lady Downe's Grape, and some Apples. However, the *Vicomtesse Héricart de Thury* Strawberries with which Mr. Smith, Oxenford, easily secured first prize, were of great excellence. Mr. Smith was also first for Grapes, Mr. Kidd, Carberry Tower, being second. Very few vegetables were shown.

Classes devoted to the trade were not largely filled. Messrs. R. B. Laird, the only exhibitors of Hyacinths, were first for twenty-four spikes, also for Tulips and for *Narcissus*. For four *Azalea indica* Messrs. Dicksons & Co. were first, and Messrs. Laird second, the same firms being the only exhibitors in several classes, and dividing the first and second prizes between them. Mr. J. Bryson, Helcasburgh, was the only exhibitor of cut Roses; and Messrs. Laird, in like manner, the only firm that staged cut *Camellias*.

#### BRIGHTON.—APRIL 11TH AND 12TH.

THE second annual Exhibition of spring foliage and flowering plants was held in the Corn Exchange on Tuesday and Wednesday, April 11th and 12th. The entries in the majority of the classes were numerous, and the competition keen. The exhibits, as compared with last year, showed an appreciable improvement both in the quality of the plants and in number of entries. The arrangements of the Show were excellent, and reflected much credit on the Committee and its able and energetic Secretary, Mr. Mark Longhurst. Messrs. Glen and Hudson were the Judges.

Class 1. for twelve Hyacinths in pots, not less than six varieties, brought five competitors. Mr. G. Hart, gardener to H. Head, Esq., Buckingham, Shoreham, was first with well-grown examples of *King of the Blues*, *Lord Derby*, *Von Schiller*, *Seraphine*, *Czar Peter*, *La Grandesse*, and *Lord Byron*. Mr. J. Hill, gardener to M. Wallis, Esq., Springfield,

Withdeane, was second; and Mr. W. Jupp, gardener to G. Boulton, Esq., Torfield, Eastbourne, third. The first prize for six varieties of Hyacinths was awarded to Mr. G. Sims, gardener to C. J. Inwood, Esq., The Retreat, Dyke Road, Brighton, who staged fine examples of *La Citronière*, *Lord Macauley*, *Paix de l'Europe*, *Von Schiller*, and *Grand Vainqueur*; Mr. Anderson, gardener to B. J. Rogers Tillstone, Esq., Mousie Coombe, Lewes Road, Brighton, and Messrs. J. Peed & Son, Roupell Park Nurseries, Norwood Road, S.E., being second and third respectively. Mr. Murrell, gardener to Mrs. Macdonald, Manor House, Preston Park, Brighton, was adjudged the first prize for twelve pots of Tulips. In this exhibit splendidly flowered examples of *Chrysolora*, *Joost Van Vondel*, *Cottage Maid*, *Keizers Kroon*, *Artus*, and *La Reine* were staged. The second and third prizes went to Mr. Fry, gardener to C. W. Catt, Esq. (President of the Society), 52, Middle Street, Brighton, and Mr. Hill in the order named.

For six pots of Tulips Mr. Hart was first, showing *Thos. Moore*, *Proserpine*, *Duc de Berlin*, *Tournesol*, and *Ophir d'Or*. Mr. Rupert Miller, Southdown Nursery, Shoreham, was first with twelve pots of *Narcissi* in flower, Mr. Hart being second; both exhibits were very good.



FIG. 58.—PRIMULA CALYCINA. (See page 300.)

There were four competitors in the class for six pots of *Freesias*, and the competition was keen, Mr. Hart being first with some grand pots. Mr. Jupp was second, and Mr. Fry third. For twelve pots of *Lily of the Valley* the prizes were again closely contested, Mr. J. Gore, florist, Polegate, being accorded the first, Mr. R. Miller second, and Messrs. W. Miles & Co., West Brighton Nursery, Hove, third. In the class for six pots *Lily of the Valley* Mr. Jupp was first, and Mr. E. Meachen, gardener to Mrs. Armstrong, Woodslee, Withdeane, second. *Scillas* were shown by Mr. Hart only, who was awarded the first prize. For six pots of *Lachenalias* Mr. Meachen was first, Mr. Fry second, and Mr. A. E. Coleman, 51, Shaftesbury Road, Brighton, third. Each of these exhibits were excellent, the plants being very finely grown. Mr. G. House, gardener to F. Mowett, Esq., C.B., Withdeane Hall, Patcham, was first for six *Amaryllises*, showing amongst others *Flora*, *Queen Elizabeth*, and *Delbata*. Mr. Hart was second.

*Gloxinias* were magnificent, Messrs. J. Peed & Son being first, Mr. G. House and Mr. Anderson second and third respectively. Messrs. J. Peed & Son were again first for *Cyclamens*, and Mr. Meachen second. Mr. Murrell was awarded first prize for six *Cyclamens*, his exhibit being in every way an excellent one; Mr. G. Miles, Victoria Nurseries, Dyke Road, Brighton, was second. For a pan of *Anemones* Mr. Hill was first, Mr. Meachen second, and Mr. J. Lewis, 37, Preston Road, Brighton third. These pans were very fine indeed in every case. Messrs. W. Miles & Co. were an easy first for six pots of *Dielytra spectabilis* the second and third prizes going to Messrs. Jupp and Hill in the order named. For twelve pots of *Spiræa japonica* the competition was very keen, Mr. House being eventually awarded the first prize, Messrs. J. Peed & Son the second, and Mr. R. Miller the third. Mr. G. Hart was first for six *Spiræas*, Mr. Murrell second, and Mr. Fry third. There was only one entry in the class for a pot of standard *Mignonette*, for



which Mr. Baker, gardener to F. H. Brady, Esq., Wykeham, Burgess Hill, was awarded second prize. Pots of Mignonette were grandly represented by Messrs. J. Peed & Son, who very easily won the first prize; Mr. A. Golding, gardener to Horace St. Geo. Voules, Esq., Uplands, Dyke Road, Brighton, being second; and Mr. Hill third.

For twelve Cinerarias, Mr. Murrell was first with some grand specimens, Mr. House being second, and Messrs. W. Miles & Co. third. Mr. G. Miles was first for six Cinerarias, and Mr. Meachen second. There were only two entries in the class for twelve double Primulas, Messrs. W. Miles & Co. being first, and Mr. Murrell second. For six double Primulas, Mr. House was first. Mr. Hill was first with twelve single Primulas, very fine plants. Mr. Jupp was awarded the first prize for six single Primulas. There were two competitors in the class for six pots of double Stocks, Mr. Hy. Smythe, Centurion Road Nurseries, Brighton, being first, and Mr. Hill third. For six Show Auriculas, Mr. S. Tilley, 13, Clermont Road, Preston Park, was first. Mr. Anderson was first with six Alpine Auriculas, showing excellent plants. In the class for twelve Polyanthus, Mr. Baker was first; Mr. Wickham, gardener to J. K. Nye, Esq., Highlands, Keymer, second; and Mr. Anderson third.

The competition was very keen in the class for twelve greenhouse Azaleas, Mr. Murrell being awarded first prize for some magnificently flowered specimens; Mr. Jupp second, and Mr. Golding third. For six Azaleas Mr. Meachen was first, Mr. Sims second, and Messrs. Peed and Son third. In the class for six Ghent or Mollis Azaleas there was but one entry, that of Messrs. W. Miles & Co., who were adjudged first prize for their charming stand. For six Genistas Mr. Wickham was first with very fine specimens, Messrs. W. Miles & Co. second, and Messrs. Peed and Son third. There were seven entries in the class for six Deutzias, Mr. Meachen taking first prize, Mr. G. House second, and Mr. Wickham third.

For six Roses in pots Mr. Meachen was first with magnificently grown plants, Messrs. Peed & Son second, and Mr. Fry third. Show Pelargoniums were excellently shown by Messrs. Peed & Son, who were awarded first prize. Mr. G. Miles being second. Mr. Murrell was first for six double Pelargoniums, showing fine plants. For six Zonal Pelargoniums Mr. Meachen was first, Messrs. Peed & Son second, and Mr. Fry third. Arum Lilies were finely shown by Mr. Murrell, who gained the first prize, Mr. Meachen being second, and Messrs. Peed & Son third. For six pots of Strawberries bearing fruit Mr. Golding was first, and Mr. A. G. Davey, Oakwood Road, Burgess Hill, second.

For groups of miscellaneous plants Mr. J. Turner, gardener to Sir G. Smyth, Wickham Hall, Furze Hill, Hove, was first with a grand exhibit; Mr. Miles second, and Mr. Meachen third. Mr. R. Miller was first for twelve bunches of Narcissi; Mr. Savage, 33, Western Road, Brighton, being second; and Mr. G. Hart third. For boxes of cut flowers, Mr. J. Gore was first, Mr. Meachen second, and Mr. Wickham third. For tables of plants Mr. Jupp was first, Mr. J. Turner second, and Mr. G. Miles third. In the class for six Hydrangeas Mr. Hy. Smythe was first with magnificent examples, Mr. Hill and Messrs. Peed and Son being second and third respectively.

For a brace of Cucumbers Mr. H. C. Prinsep, Buxted Park, Uckfield, was first with Sutton's Matchless, Mr. Golding second, and Mr. G. Helman, gardener to the Right Hon. Viscount Gage, Firle Park, Lewes, third. For a dish of Strawberries Mr. Ball, fruit grower, Shoreham, was first, Mr. G. Helman second, and Mr. Golding third. Mr. Thos. Fairs, gardener to R. Clowes, Esq., Clayton Wickham, Hassocks, was first for two bunches of Grapes; Mr. Kemp, gardener to C. R. Scrasse-Dickens, Coolhurst, Horsham, being second. Lady Downe's Seedling was staged by each competitor.

Mr. H. C. Prinsep sent a fine table of plants, not for competition. Messrs. Balchin & Son, nurserymen, Brighton, staged a magnificent group of foliage and flowering plants; and Messrs. J. Cheal & Son, Lowfield Nursery, Crawley, a fine table of Apples, neither of which exhibits was for competition.

The amateurs' division was excellently represented, the entries being numerous and the competition very keen.

prevent the soil cracking. Keep a sharp look out for red spider, and if any appear on the leaves sponge the affected parts carefully with a soft soap solution, 2 ozs. to the gallon of water; this, though a tedious process, is an excellent remedy, and taken in time effectually prevents the spread of the pest. Painting the hot-water pipes with sulphur brought to the consistency of cream with skim milk is an old remedy for red spider, and very effectual against mildew, but care must be taken not to give a powerful dose, as the fumes are very injurious to the tender skins of Frontignan and Muscat Grapes. Ventilate night and day when the berries begin colouring, and increase it as they approach ripeness, maintaining, however, a circulation of warm, rather dry air until the Grapes are thoroughly finished, when the temperature should be gradually reduced.

*Vines in Flower.*—Muscats and other shy-setting Grapes require a rather high temperature to set freely, the points of the bunches being kept well up to the light, and a free circulation of air with a fair supply of atmospheric moisture to prevent the young foliage suffering under the influence of bright sun. The temperature may be maintained at 70° by night, but with the Vines in good condition free setting is effected with 65°, or even 60° at night, a little air being admitted constantly, and 70° to 75° by day, with 10° to 15° rise from sun heat. When the bunches are in flower they should be lightly tapped on the stem each day after the house has been ventilated an hour or two, or they may be brushed over lightly with the hand, which rids the flowers of their caps, sets the stamens free, and disperses the pollen on the stigmas. If there be no pollen visible as a yellowish dust when the bunches are brushed over with the hand it should be taken from varieties that supply it abundantly, as Alicante and Black Hamburgh, and a large flat camel's hair brush be filled with it and the bunches brushed over after the hand has been drawn over them, refilling the brush with pollen as occasion requires, it being collected on a sheet of white paper turned up at the edges. Alnwick Seedling, Mrs. Pince, Lady Downe's, and other varieties liable to produce small seedless berries should be carefully fertilised on fine days, when the caps part readily from the flowers.

*Late Houses.*—Accelerate the growth of late Vines by making the most of solar heat, as all long-keeping Grapes cannot be over-ripened for keeping sound for some months after they are removed from the Vines, Lady Downe's ripened by early September being quite fresh in May and June. Ventilate early on fine mornings, as soon as the sun acts on the house, and allow the heat to rise to 80° with increased ventilation and plenty of moisture, closing in time for it to rise to 85° or 90° from sun heat on fine afternoons. A temperature of 60° at night will be sufficient until the Grapes flower, when 5° more will be necessary to increase the length of the bunches and produce conditions favourable to the setting of the fruit. Gros Colman, Gros Guillaume, and Alicante set freely; but most other kinds of late Grapes require careful artificial impregnation, they being attended to as before advised.

*Planting Vines.*—When the Vines commence growing is a good time to plant them, they having been cut back in early winter and been kept in a cool house, the growths will be 1 to 3 inches long. Turn them out of the pots, remove all the soil, preferably washing it away, and preserve the fibres. Spread the roots out straight and flat, the soil of the border being brought to the required height, covering the roots to a depth of 3 or 4 inches, working the soil well amongst them with the hand, and giving a good watering at a temperature of 90°, and mulch a foot farther than the roots extend with an inch thickness of lumpy manure. If the Vines have not been shortened do not cut them back now, but remove the buds from the upper portion of the cane down to where fresh growth is desired to issue, and shorten the canes when the Vines are in full leaf. Sprinkle the Vines twice a day, but avoid forcing them into growth until they have formed new roots, as will be indicated by their starting freely, then afford a temperature of 55° to 60° at night, 60° to 65° by day, advancing 10° to 15° from sun heat, closing early in the afternoon with plenty of atmospheric moisture.

*Making Borders.*—Four to 6 feet width of border will be sufficient to commence with, confining the roots to the inside border (if planted inside) until that is fully occupied with roots, when they may be admitted to a prepared width of outside border. For general purposes the borders are preferably partly inside and outside; for early forcing and tender varieties, as Frontignans and Muscats, inside borders only are best, whilst for greenhouses or midseason Grapes the borders may be wholly outside, taking care to protect the stems with haybands. In well-drained soils the Vines will produce excellent Grapes by merely trenching or stirring the ground 2 feet deep, as for other fruit trees, and feeding at the surface. Where the soil is unsuitable and the subsoil wet and cold it will be necessary to concrete the bottom of the border, but it is quite unnecessary to do where the sub-stratum consists of gravel or other porous substance. Place in 1 foot thickness of rubble, proper drains being provided to carry off the superfluous moisture. A thin layer of turves over the drainage will make it secure against the soil choking it, but we prefer a 3-inch layer of old mortar rubbish freed of pieces of wood. Two feet depth of suitable soil is ample. It may consist of the top 3 inches of a pasture where the soil is a good yellow loam, containing a fair per-centage of small stones, as very heavy close soil is not desirable, and this mixed with a tenth of old mortar rubbish, a similar proportion of broken oyster shells, and a like quantity of charcoal will grow fine Grapes, phosphatic and potassic manures being supplied by the surface, with nitrogenic elements after the Vines require aid to growth.

As turf is rich in nitrogen, but deficient of phosphoric and potassic elements, as well as of soda and lime, 10 lbs. of kainit and 17 lbs. of



#### FRUIT FORCING.

*Vines.*—*Early Houses.*—Where the Vines were started early in December the Grapes will be taking their last swelling, and if any of the bunches are too crowded remove a few of the least promising berries with a pair of finely pointed scissors, taking care not to stab any of those left. The inside borders should be well supplied with water or liquid manure, and they must not be allowed to become dry after the Grapes are ripe, as moisture at the roots is necessary for the perfecting of the growth. Choose a bright fine morning for watering, and admit air rather freely, so that all superfluous moisture will disappear before ventilation is reduced for the day. A little short, sweetened lumpy manure may be spread on the surface, to stimulate the roots and



Thomas's phosphate powder may be mixed with each square yard of border 2 feet deep (18 cubic feet), mixing well, and these substances will not only afford mineral matter over a long period, but render others available, and prove useful against predatory larvæ. Basic slag, however, is not desirable for soils other than those containing much humus, as the rich soil of gardens, or considerable vegetable matter, as turf. As a rule it would be much better to rely on the ordinary soil of gardens, over efficient drainage, than to bring in fresh loam, often at great expense, for the production of Grapes.

**Young Vines.**—Those planted last spring will now be breaking naturally, and when the buds have pushed growths about half an inch long a little fire heat will prove beneficial, especially on cold days. Remove all buds except one at each break, retain the strongest and crop lightly, but supernumeraries may be allowed to carry as many Grapes as they are calculated to colour well. Leave the shoots on the permanent Vines about 18 inches apart on both sides of the rods, and pinch the laterals on the extension canes at the first leaf, and sub-laterals may be similarly treated, removing all tendrils, and stopping the main canes at 6 to 9 feet, so as to secure those extents with well developed buds and thoroughly ripened wood.

#### THE KITCHEN GARDEN.

**Globe Artichokes.**—Unprotected clumps are dead in many instances, and all of those that were heavily banked up with either straw litter or ashes were also badly crippled by frosts. The strongest growths, or those which if they escape destruction by frosts are the first to produce flower heads, have quite disappeared, and in their place are numerous weakly growths. Unless the latter are early and freely thinned out they will greatly weaken each other, and the crops be very poor accordingly. The first proceeding should be to well bare the clumps and also the surface roots to a distance of 18 inches, and after the suckers have been reduced to about three, or at the most four to each stool, to cover the roots with a layer of solid manure, returning the soil previously thrown back on to this. It should be remembered that these Artichokes cannot well be grown too strongly, hence the necessity for good dressings of manure, followed later on, if the season promises to be a dry one, with occasional heavy waterings.

**Forming Fresh Beds.**—Old beds soon become incapable of producing extra fine succulent flower heads, and are also the first to collapse in hot dry weather. Young plants, according to the requirements of the establishment, ought, therefore, to be put out every spring and an equal number of old ones destroyed, none being retained on a site for, say, longer than five years. These Artichokes should have a deep and very freely manured root run prepared for them, no vegetable grown standing in greater need of this, or better repaying for the extra trouble incidental to high culture. Ground naturally of a strong retentive character best suits them, and in order to have this in a finely divided state the trenching ought to have been done soon enough for frosts, winds, sunshine and rain to properly pulverise it. If the planting must be carried out on lumpy ground surround the roots with a little fine added soil. When the old stools are bared for the purpose of thinning out the shoots or manuring, that is the time for detaching good side shoots with a few healthy roots attached. These should be planted with a trowel in groups of three each, the groups to be 3 feet apart each way and the plants about 8 inches asunder. None of the stem should be out of the ground, but the heart ought to be kept clear of the soil. If the ground is all dry give the young plants a watering and mulch with straw litter. The majority ought to produce serviceable flower heads in the autumn and abundance of extra strong ones early next year.

**Seedling Globe Artichokes.**—Seedlings are very easily raised, and can be had large enough to produce freely the same season. If the stock of old plants was destroyed last winter or an early supply of seedling Artichokes is wanted for any other reason, the seeds may be sown at once, three or four in every 4-inch pot, and placed in heat. They will germinate quickly, and the seedlings should early be reduced to one in each pot. Before they become badly root-bound, harden off and plant out either as advised in the case of divisions or 18 inches apart in rows 3 feet apart. Given a little attention at the outset, they will grow strongly, and throw up their flower stems early, when the worthless forms should be cut out as fast as they are detected. A late supply may be had by sowing seed now, either in rows or patches, at the distances recommended for the pot plants, thinning out of the seedlings being early resorted to. The Green Globe are the most reliable.

**Asparagus.**—Open-air beds have furnished a surprise, cutting having commenced a month earlier than usually happens. Instead of having to forward it, something has had to be done to retard or to protect the young shoots. The latter when first peeping through the ground are most susceptible of injury from frosts, and during April, if not later, ought to have the benefit of protection. All that is needed is a fairly thick covering of straw litter, this being placed on the beds and lightened up after heavy rains. Such coverings, in addition to protecting the young shoots, also serve to conserve the moisture in the beds during the summer and to keep down weeds. All the shoots that show through the litter ought to be cut in the evening whenever frosts are imminent.

**Planting Asparagus.**—While bright weather is prevalent planting might usually with advantage be deferred, but now that growth is so far advanced the first favourable opportunity that offers for transplanting Asparagus should not be missed. Dull warm showery weather is the best time for doing this important work. Planting on the level answers well in the case of warm light soils, but where the opposite prevails raised beds are to be preferred. In the former instance the

plants may be put out from 18 inches to 2 feet apart in rows 3 feet apart, no pathways or alleys being needed. Raised beds 5 feet wide will hold three rows of plants, the outside ones being 12 inches from the edges, and for an early supply beds 3 feet wide to hold two rows of plants answer well. In either case dispose the plants not less than 15 inches apart. More than ordinary pains should be taken in planting. Either open wide drills or single holes, making the bottoms slightly rounded, set the plants on this, and spread out the roots evenly, covering with good fine soil, the crowns being eventually disposed 2 inches below the level. It is a mistake for salt or any other strong artificial manure to come into contact with the newly disturbed Asparagus roots, but a liberal sprinkling of fish bone manure would prove most beneficial. There must be no cutting from Asparagus before the plants have been in their present quarters at least two clear seasons, a little self-denial in that direction well repaying in the end.

**Sowing Asparagus Seed.**—It is not yet too late to sow Asparagus seed, and it may be done either in shallow drills not less than 15 inches apart, with a view to have abundance of plants for forming fresh beds a year or two hence, or the seeds may be sown where the plants are to remain permanently, the rows being arranged the same distances apart as advised in the case of putting out plants. If the drills are dry when opened give a gentle watering prior to sowing, and the seed will then germinate quickly and strongly.

**Potato Planting.**—The weather has been very favourable for this work, and all may now be completed. Only the short-topped quickly maturing varieties are suitable for planting with a view to cropping between with Brussels Sprouts, early Broccoli, autumn Cauliflower, and Borecoles. Arrange the rows of Potatoes not less than 3 feet apart.

#### PLANT HOUSES.

**Allamandas.**—Those that it is intended to train under the roof should not be allowed to start away with too many shoots, or else they will before the season is over become a crowded mass and overshadow plants growing beneath them. Not only should the shoots be well thinned, but attention is needed in this matter every time they show flower and start again into growth. Those that are growing freely must have liberal supplies of water, and all that have not yet commenced flowering should be well syringed in order to keep the plants free of yellow thrip.

**Stephanotis floribunda.**—Plants that are growing freely should not be kept too hot and moist, or else the growing ends will turn yellow and die. Employ less fire heat and give air freely during fine days to induce firm sturdy growth, which is then certain to flower profusely. Plants that have their pots full of roots and are growing and flowering should have weak stimulants every time water is needed. Syringe freely in order to keep the plants free from mealy bug. If any make their appearance syringe with the petroleum and water solution, but shade the plants until the oil has evaporated.

**Clerodendron Balfouriana.**—Specimens that have flowered should be encouraged to grow by placing them in moist heat. Grow the plants fully exposed to the sun, and if possible train the growing shoots beneath the roof. They ripen better and flower more profusely by this method than when the growths are trained closely to trellises of various shapes. Young plants raised from cuttings should be potted, as they need more root room; train these under the roof to a thin cord, so that they can be thoroughly ripened. Plants in 7-inch pots are most useful for the decoration of the conservatory, and well repay the trouble involved in growing a batch from cuttings annually.

**Poinsettias.**—Old plants that were cut back will have started into growth sufficiently to have the soil shaken from their roots and be repotted. Directly these are started give them an intermediate temperature. Young plants raised from eyes and placed thickly together in pans will be rooted; these should be potted singly, or a good number of their roots will be destroyed in dividing them.

**Nepenthes.**—Do not allow bright sun to reach these plants, or their foliage will quickly be browned. Syringe freely to keep the foliage free from thrips, and never allow the plants to approach dryness at their roots. Pinch all shoots that have made more than four or five leaves, or they soon fail to produce pitchers. When healthy all shoots that are pinched soon break again into growth. It is only by pinching them freely that large bushy plants that will continue to pitcher can be produced.

**Justicia flavicomma.**—The earliest cuttings will be well rooted, and should be transferred into 4-inch pots. Start them again in brisk heat, and then place them in an intermediate temperature. Insert another good batch of cuttings singly in thumb pots, and place them under handlights where they can be shaded from the sun until they are rooted.

**Tydas.**—Cuttings of evergreen kinds such as Madame Heine and others should now be rooted in thumb pots. They root so freely that when the necessary stock of cuttings have been obtained the old plants may be thrown away. When the cuttings are rooted and have grown a few inches in length the points may be re-rooted, when those from which the tops have been taken will branch freely and make large bushes.

**Gardenias.**—Plants that have flowered may be pruned back and started again into growth in brisk heat. If they can be given gentle bottom heat all the better until they have begun to grow, when they may be repotted if they need it. When cut back, if infested with scale or mealy bug, syringe them freely with petroleum and water, using 2 ozs. of oil to each gallon of water.



# THE BEE-KEEPER.

## APIARIAN NOTES.

### THE WEATHER AND BEES.

WE have had another week of cloudless sky, with a day temperature ranging from 56° to 68°, and the night temperature from 27° to 30°. The days are hazy, which hinders the bees from being so active as they would with a clear atmosphere. In fact, they are not nearly so active as they were during the two last weeks in March, although the Gooseberry blossoms are well out now. No doubt the seeming inactivity of the bees is due to the electrical state of the atmosphere. On the evening of the 6th the flashes of lightning were frequent, and the day was sultry. Not more than twice during the past half century has there been so much fine weather at this same time of year, or so many high temperatures.

### THE CONDITION OF HIVES.

Everywhere, if casualties through carelessness and bad management are exempted, bees are generally speaking in a forward state. From the Midlands I hear of supers being added, and in many places in Scotland hives are ready for them or swarming. In an apiary only half a mile distant from me, but out of the smoke, the hives are sweating greatly, and increasing in weight. They are all of Tunisian blood. A gamekeeper who lived in Africa, although not a bee-keeper, recognised the bees in another good apiary as Tunisians, not "Punics," as the owner called them. I will endeavour to have an interview with him for the purpose of acquiring information.

### PUNICS AND BRITISH BEES.

I am certain that the first cross Punics are the most industrious bees imported into this country, and they are much milder in temper than the original British bee, which, however, is probably extinct in this country, notwithstanding assertions to the contrary. I appeal to all who have pure Punics to report their doings and behaviour from now onwards until the end of the season, so that notes may be compared, and the facts made known. It is a foregone conclusion that the crosses are superior, but it is desirable we should know more about the pure bees in a good season.

### QUEEN CELLS.

These are raised by the Punics in great numbers. In order to overcome the difficulties which arise through that, and avoid the unnecessary delay caused by it, the bee-keeper should examine stocks on the ninth day after swarming and destroy all surplus queen cells. This advice applies to other varieties as well.

### HONEY—A CAUTION.

Some bee-keepers are apt to be deceived with the quantity of honey gathered during a spell of fine weather such as we are enjoying. They should not trust too much to appearances, but make sure of the amount gathered and stored. Bees are increasing rapidly at present, which adds weight to hives, but at the same time food consumers, the stores being consequently reduced much quicker than some may imagine, and if inclement weather sets in the hive, unless fed, may be doomed to destruction. Hives are earlier than is usually the case, and it would be a mistake to delay too long the feeding if it be required. When the fruit blossoms are available to the bees the latter seldom require after assistance, but it is prudent to make sure on the point.

### EXTRA APPLIANCES.

With an extra fine summer it is astonishing the space bees fill with combs and honey. Larger and extra hives and supers should be provided, so that no difficulty may arise nor disappointment be experienced as the season advances when hopes run high.—A LANARKSHIRE BEE-KEEPER.

### RE-QUEENING—ARTIFICIAL SWARMING.

I SHOULD like to ask "A Lanarkshire Bee-keeper" whether I ought to re-queen my two hives of English bees. They were bought twelve months ago as stocks headed by two young queens. We had no swarms last year, and I may say that I never had bees with the same amount of brood on the 1st of April. What I wish to know is whether or not I should introduce new ones, and when. Could I rear my own, or purchase one? A few hints on artificial swarming would be appreciated.—H. RICHARDSON.

[It is not necessary to requeen hives that have queens of 1892 until the end of June or beginning of July, pre-niming they are taken to the moors. In the case mentioned we should let them swarm, then on the ninth day afterwards form nuclei by dividing combs, bees, and brood into as many as are strong enough. If successful with the nuclei it will be the better plan to depose the old queens, and introduce queens of the nuclei when laying; this

gives youthful blood, and the best results follow. The proper time to rear queens is at the natural swarming time, when the hives are crowded with bees and the combs full of brood or honey.

Artificial swarming should be performed when the bees and hive are in a fit state for it, and then only, otherwise the hopes of profit disappear. Straw hives should be inverted upon some platform or other contrivance. An empty hive is at first placed over the mouth of the stock, and a few raps on it will cause the bees to fill themselves and ascend into the empty hive; when they begin to do this draw it to one side and rap with the other, or with a hinge made for the purpose the two hives may be fastened together, and the empty one held at the proper angle, allowing a full view of both hives, and freedom with both hands. In all artificial swarming there is a great tendency for the bees to search out the old stock and go back to it. It is therefore advisable to be sure that plenty of bees are left to tend the brood, and remove it a considerable distance from the old site, which the swarm should occupy. Repeatedly I have had swarmed stocks removed within doors, yet the bees found them out.

With frame hives the task is more simple. Remove the frame with the queen on it, place it in a new hive on the site of old stock, then brush gently, or shake from the other frames the proper number of bees on to the swarm, and remove the stock as with the straw hive. Put a frame filled with foundation in the vacancy, and form the nuclei as advised above.—A. L. B. K.]

## TRADE CATALOGUES RECEIVED.

Charles Turner, Royal Nurseries, Slough.—*Softwooded Stove and Greenhouse Plants.*

W. Paul & Son, Waltham Cross.—*New Roses and Florists' Flowers.*

John Laing & Sons, Forest Hill, S.E.—*New and Rare Climbers.*



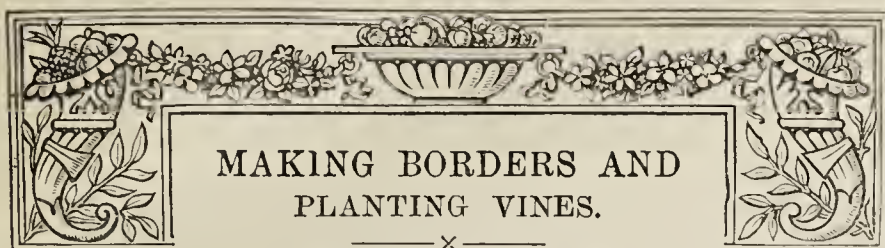
••All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Compost for Tea Roses (F. D.).**—Turfy loam of medium texture, a sixth part each of crumbled manure and leaf soil, with a little crushed lime rubbish and wood ashes for ensuring porosity, will grow Tea Roses in pots well if the plants are kept quite free from insects and good judgment is exercised in watering. In the absence of either of those essential conditions, the best of soil will not produce healthy growth and good blooms. A pound of crushed bones mixed with half a bushel of the compost would improve it considerably, but excellent results are obtained without such addition, any extra support needed by the plants being afforded by top-dressings or liquid manure.

**Layering Chrysanthemums (An Amateur).**—The process is perfectly easy, and with ordinary attention you need have no fear of failure occurring. Plant a few old plants out of doors in a row; let them grow as wild as they choose till the month of July; then take as many pots as plants are required, and plunge them, filled with some rich soil, into the ground, at such a distance from the plants growing in the ground as will allow the tops only, when bent down, to reach the pots; bring them carefully down, and peg each branch firmly into the soil. Leave about 2 inches of the top out of the soil. If the shoot is branched it is well, but if not it must not be topped, because there is some danger that the layer may continue to grow and not flower if topped so late in the season. The aim of this mode of propagation is to make them flower when very dwarf; and, therefore, the layer should have buds upon it just visible at the time when the layering is performed. Keep the soil in the pots moderately moist till roots are formed, and after that water more freely. When it is certain the layers have made plenty of roots cut them off from the parent plant, and remove them into a frame or pit deep enough to receive them. Should they flag during the day, give a sprinkling of water, and shade for a day or two till they recover; then give air and water freely. They will then be good plants, about a foot high, with, perhaps, six or ten flowers on each.





## MAKING BORDERS AND PLANTING VINES.

A COMPOST of five cartloads of sound turfy loam, one cartload of lime rubble, one of wood ashes, one of horse droppings, and an ordinary sized barrowful of fresh soot will suit the requirements of the Vine admirably. The whole should be well mixed before being formed into a border. In this mixture Vines will grow freely and yield satisfactory crops of fruit for several years, other things being duly attended to; but should the cultivator be disposed to add 2 cwt. of half-inch bones to the above ingredients it will be all the better for the Vines. Where indifferent loam has to be used in the formation of Vine borders two bags of Thomson's Vine manure should be added to every eight loads of the compost described, turning the whole over two or three times before use.

In making a Vine border the first point to be determined is the width and depth it shall be, also ascertaining the highest water level of the place, so as to keep the bottom of the border well above that point. According to my experience the majority of Vine borders in England, Ireland, and Scotland are made much too wide and also too deep. Who, I ask, has ever found a Vine border 12 or 15 feet wide, 3½ feet deep at back, and a little less than 3 feet deep in front, full of roots at any time? I never have. Consequently I have, in recent years, considerably reduced the width and depth of some of the Vine borders here with advantage. A border 7 feet wide, 2 feet 9 inches deep at the back, and about 6 inches less in the front from the concrete bottom will afford ample space for the roots of the most vigorous-growing Vines.

The bottom of the border should have a fall of 6 inches from the back to the front, at which point a series of deep gutter bricks should be set in cement on a level with the bottom of border and connected with a drain for carrying off superfluous water. Unless the subsoil consists of stone or chalk it will be necessary to place 6 inches thick of concrete, composed of five parts of gravel to one of stone lime, well mixed on the bottom. A like thickness of chalk pounded well together will answer the same purpose. Six inches thick of brickbats, broken somewhat fine on the top, should be laid on the hard bottom for drainage, covering this with turves from 1 to 2 inches thick, grass side down, thereby completing a quick and sound drainage. In forming the border make it in sections 3½ feet wide from the front wall of the vinery, keeping the soil in position with a side wall built of turves, and making allowance for the loosely thrown together soil subsiding 6 or 7 inches within a few weeks from the time of making the border. If the border is an inside one the soil should be in the house say a week before planting is done, to allow of its becoming slightly warm before being brought in contact with the roots of the young Vines when turned out of the pots.

Although Vines may be successfully planted any time during the interval from February to the end of September, according to circumstances, the present is, in my opinion, the best month in the year for doing such important work, as the Vines are then less liable to experience any check in the process of being transplanted. The external and internal conditions admit of an equable and genial temperature in the soil and house being maintained with but little assistance from the hot-water apparatus, and thereby favouring a sturdy growth being made, other points being attended to

in the way of ventilation and the distribution of moisture at the roots and in the house during the heat of the day.

Before planting the Vines make a series of holes 2 feet apart, beginning at 2 feet from the end, between the front wall and the hot-water pipes, the entire length of the border. If the border is an outside one make the holes close up to the wall opposite the spaces cut therein for the Vines to be taken into the house. Then provide a sufficient amount of rather fine soil of about the same temperature as that in which the Vines are growing in the pots for placing around them when being planted. Assuming the Vines are of this year's raising from eyes, or if "cut-backs" that they had been shaken out early, root-pruned, and repotted, there will be no necessity for disturbing the roots in planting, but, on the contrary, turn them carefully out and plant them 1 inch deeper than they were in the pots; the permanent Vines midway between the rafters, and those for yielding a crop of fruit next year between them, making the soil firm. Put a stick to each Vine for support and secure the rods loosely to the trellis, but leave them sufficiently long to subside 6 or 7 inches with the soil. Give sufficient tepid water through to settle the soil about the roots, and then a surface dressing of horse droppings or other short manure to the thickness of 2 or 3 inches.

In the event of the cultivator having to plant one-year Vines obtained from the nursery, or home-grown which had not been shaken out and treated as described above earlier in the year, it will be necessary to disentangle and shorten back the roots, then spread them out in every direction with a slight inclination downwards, cover with 6 inches of soil, and give water as recommended above; also afford shade from sunshine with mats or other heavy material during the heat of the day until the roots commence working, maintaining a close moist atmosphere and syringing the Vines slightly three or four times a day to keep the foliage fresh and encourage new growth in root and branch.

After the Vines have taken well to the new soil the shading should be discontinued, and plenty of fresh air admitted to the house during the heat of the day, closing early in the afternoon, say from 3.30 to 4.30, during the next four months, with plenty of water distributed in the house, and thoroughly syringe the Vines at the same time. Admit a little air in the morning when the thermometer has registered 75°, afterwards increasing and decreasing the amount according to the rise and fall of the temperature. Also give tepid water at the roots in proportion to the daily increasing requirements of the individual Vines and the lengthening hours of light and increasing power of the sun's rays.

During the months of September and October air should be more liberally admitted to the houses, leaving the top and bottom ventilators open a little at night, and maintaining altogether a drier atmosphere in the house until the Vines have shed the leaves, with the object of thoroughly maturing the wood. Let the stopping and pinching of the young growth be proceeded with on the lines laid down at page 281, under the heading of "Pruning Vines—an Object Lesson."—H. W. WARD, *Longford Castle Gardens*.

## THE SPRING IN A SCOTTISH MANSE GARDEN.

SPRING is the most interesting season of the year. Autumn is, indeed, more impressively beautiful, with its gorgeous woods and ethereal sunsets; but its loveliness is everywhere touched and saddened by the presence of decay. Spring, on the other hand, is essentially a period of hope; it tells of bloom and beauty yet to come.

Since I wrote my last article to the *Journal of Horticulture* (page 251) on this fascinating subject the weather has been exquisite, at least by day; though (perhaps on the principle that every gift has its penalty) it has been for purposes of growth and development too prevailingly dry. The influence of the heavy



dews which fell during the evenings has invariably been towards early morning almost neutralised by frost. In my garden, which has the great advantage of absolute protection from north and east winds, some plants have been almost absolutely stationary; while others, like the gigantic Lily of the Himalayas (*Lilium giganteum cordifolium*), are developing with great rapidity. Of all my floral possessions the above is the most interesting. It has taken three years in accordance with its unique yet invariable custom to build up its present immense flowering bulb, and now it is beginning to throw out successively its magnificent heart-shaped leaves. My other Lilies, such as *auratum*, *speciosum*, *longiflorum*, *umbellatum*, *Martagon*, and *Krameri*, are of somewhat slower growth but considering the excessive dryness of the season they are doing tolerably well.

"Longsleeps," says Tennyson in his immortal "In Memoriam," "the summer in the seed." But this assertion is hardly expressive of the rapidly germinating *Convolvulus minor*, which, sown less than a week ago, is above the ground to-day. The exceedingly graceful Shirley Poppy, which is just the wild flower of that name introduced into our gardens and improved by cultivation, seems also to be a notable exception to the general rule.

Should April showers come soon—falling like mercy, as depicted by Shakespeare, "upon the place beneath"—Roses will be exceptionally early this year. With me Duke of Edinburgh, Sir Garnet Wolseley, Belle Lyonnaise, Marguerite Dickson, Reynolds Hole, and many others have long been in leaf; and several buds are already very prominent on that earliest of all Roses, Gloire de Dijon.

In a recent letter, abounding in characteristic flashes of humour, the Dean of Rochester (whom I am to have the pleasure of visiting next month) gave me the parentage of Reynolds Hole, one of the most exquisite dark Roses in cultivation, which bears his honoured name. "It comes," he says, "from Cheshunt, and is closely affiliated to the Duke of Edinburgh. It is, like many other beauties, uncertain, coy, and hard to please, yet exquisitely lovely when in a good humour."

One of the latest additions to my miniature rosarium is the Salamander Rose, described in several horticultural journals as a "gorgeous crimson" from Waltham Cross in Hertfordshire. It is like its distinguished predecessors, Mrs. John Laing, Marguerite Dickson, and Mrs. Paul, which it resembles not in colour though it has many of their finest attributes—a gold medallist of the National Rose Society.

Another valuable recent acquisition is a bed of modern Pansies and Violas, received from the great Rothesay cultivators of those flowers, of which my special favourites are the Duchess of Sutherland, the Countess of Hopetoun, the Countess of Kintore, Crimson King, Ardwell Gem, and Duchess of Fife. The last mentioned is an especially charming variety, a beautiful shade of primrose, distinctly edged with blue. The Viola blooms incessantly from March to November, and amply repays the most assiduous attention. It is a modest contemporary of the vernal Daffodil, and blooms with equanimity upon the grave of the latest autumnal Rose.—DAVID R. WILLIAMSON.

## INSECTS OF THE FLOWER GARDEN.

(Concluded from page 108.)

SOME years ago, before London had assumed its present huge proportions, and when it was belted around with many acres of suburban market gardens, those that had houses near these frequently complained of the host of flies that infested their rooms. This was to be accounted for by the large quantities of natural manure used, in which the flies found a breeding place, especially the common house fly and the yellow dung fly. Artificial manures have diminished the multiplication of flies in gardens; but they are always favourite resorts of the Muscidae, or what we call the flies proper, insects very diverse in size and form, yet marked by a family likeness. Various are the causes that bring them into our flower gardens. Many are seekers of honey, others come in pursuit of smaller insects, and a few appear in the capacity of bloodsuckers if they have the chance of attacking anyone. A large number amongst the tiny species are, while larvæ, producers of galls, or leaf-miners; but they are only disfigurers, and do not really weaken or kill plants.

It is likely there are flies which help to fertilise flowers, but their agency is not so marked as is that of the bee tribe. Some plants of the Composite order, allied to the Chrysanthemum, and the peculiar aroma of which has a repellant influence on bees, are much visited by some of the larger flies. But flies have their fancies, and the house or domestic fly is found to have a dislike to the smell of most Pelargoniums, so that if a row of these plants is placed outside a window, even if the sash be raised, very few

flies will cross them to enter a room. Frequently this fly is accused of "biting" people indoor or out; but in fact all it does is to settle upon the skin should it happen to be moist, and take up a drop or two with its fleshy sucker. But a fly that does frequently "bite" or puncture people when sitting in gardens is the stable fly, or *Stomoxys calcitrans*, a fly bred from manure and exceedingly like the common fly, but rather more hairy. This fly has a slender and sharp proboscis, by which it wounds men and animals; but it does not seem to inject a poison, as does the gnat and the flea.

Allied to the house and bluebottle flies are the species in the genus *Tachina*, of which we have more than a hundred, varying in size from the eighth of an inch to half an inch, some of metallic lustre, but the majority of dull colours, powerful-looking insects, which probably are of carnivorous habit as flies, and in their larval state certainly parasitic in habit. Their proceedings resemble those of the four-winged ichneumon flies; they deposit eggs on the bodies of other insects, and the grubs burrow in, gradually killing the victim. Fifty or more of them have been extracted from the body of one caterpillar, and they effect the destruction every year of part of those caterpillars that are common in flower gardens. What is more remarkable, there are some species that select as their special objects of attack individuals of the beetle race, even choosing hardish species of the weevil kind. In a way which is not explained yet, one species of *Tachina* manages to deposit eggs upon spiders, and thus revenges, to some degree, the injuries which flies suffer from these foes. *T. ferox* is a great hunter of caterpillars; it is a fly with a grey head, a brown thorax, and a yellow abdomen that appears as if polished. Another we sometimes notice is *T. grossa*, which we might take for a small black humble bee; it is adorned with some reddish hairs. We may regard the *Tachina* group of flies favourably, whether they appear amidst the flower beds or in the kitchen garden. The winter season is generally passed by them in the pupal condition under the earth, and these, with some other useful insects, are unavoidably killed occasionally by the methods adopted for the removal of hurtful insects from garden soil.

Flies of the genus *Anthomyia* are called flower-lovers, for they resort to flowers during the summer season, very often in little swarms, but they are not predatory, and regale themselves upon the nectar. Most of them are small, greyish brown, black or dull red, some being stout-bodied, some rather slender. In habit the larvæ vary, many of them live in decaying animal or vegetable matter, and occasionally attack bulbs or roots which are not decayed. Other species mine the leaves of garden plants, such as the Columbine and Honeysuckle, and some again produce galls upon the leaves or stems of plants, chiefly of the Composite order. There is a well-known pest to farmers, named *A. Betæ*, which mines the leaves of the Mangold; to this genus also belong the Cabbage, Onion, and Lettuce flies, and they resort to the flower garden, though not breeding there. Some of the larvæ of *Diplosis* have a curious habit—they live upon aphides, and so move about upon the surface of leaves amongst their prey. They have no jaws, but somehow draw in the juices of aphides by suction, and they travel in a succession of jumps, made by means of bristles along the body. In some species the larvæ are viviparous, like the aphides, during a part of the summer. False eggs occur within the larva, which increase gradually till the entire body of the parent is distended so that it bursts, and young larvæ issue forth to finish their growth by aphid food. This would seem to be a wise provision of Nature to multiply the numbers of an aphid killer just when they are most prolific.

Some of the flies of the genus *Tephritis*, though they are rather small, attract our notice when they settle upon flowers by the lustre of their eyes and the markings upon their wings, which, if examined with a magnifier, are seen to be curiously spotted or banded in different colours. They are rather objectionable visitors, as the larvæ burrow into the leaves of some herbaceous plants and produce blisters or galls, so that they fall off if not removed. When full grown they descend to the earth, and there become pupæ. It is, therefore, desirable to check the increase of these and other larvæ of flies that disfigure or damage leaves by picking and burning those we have discovered to be infected, before the insects in them have had time to emerge. The garden Pea is one of the plants resorted to by these flies, and the species of *Lobelia* and *Silene*. We have a tolerably good means of knowing those flies that are predatory in habit. As a rule they do not hover above flowers, but go from one to another by leaps, half flying, half walking, or else they run actively over leaves and flowers too with wings raised perpendicularly, like the pretty little shining species *Sepsis cynipsea*, which is so frequent in gardens about June, and destroys lesser insects.

Before leaving the fly order I may mention an insect which is sometimes called a fly, though it is really akin to aphid and coccus,



and a true bug though winged. It was not referred to in connection with that tribe because I was not then aware the insect occurred in flower gardens, but I have now been informed it has been found infesting Carnations and other flowers. This is the *Aleyrodes*, of which we have two British species, a tiny creature that has the wings covered with white dust, and holds them horizontally. It is well known also as a pest to the Tomato, and, like the little thrips, by its activity and its numbers it can do much mischief in weakening plants.—ENTOMOLOGIST.

## PRACTICAL HINTS ON MELON CULTURE.

(Continued from page 291.)

To secure the proper fertilisation of individual blooms is a matter by no means difficult to perform, and yet a full even crop of Melons is the exception rather than the rule. This is fully accounted for by the fact that if some of the flowers are fertilised a few hours before others on the same plant, the fruits from the latter will drop after swelling slightly. This is not in consequence of fertilisation being improperly performed, because if the leading fruits are removed the later ones will swell satisfactorily. It is, however, a peculiarity of Melons that if a few fruits take the lead and are not speedily checked by bending the shoots as previously advised, no others will swell until these early fruits have reached the first stage of their development. This will show how important it is to have the requisite number of flowers fully expanded at the same time before artificial fertilisation is attempted.

When the flowering stage is reached the house should be kept rather dry, a moderate circulation of air being given, so as to have the pollen dry by midday. The staminate flower should then be picked from the plant, have the corolla removed, and be placed upon the stigma of the pistillate flower. Before doing so, however, I always like to touch the anthers on the back of the hand, to make quite sure the pollen is dry; if it is not the flower should be rejected and another tried. This simple test will often prevent much disappointment. Some cultivators keep the atmosphere of a Melon house excessively dry during the flowering period, and are rewarded for their pains by a colony of insects shortly after. The plan I have practised very successfully for several years is on bright mornings to damp the floors early and then withhold moisture till an hour after the flowers have been fertilised; the ventilation is then reduced, leaving a crack at the top of the house, the floors are damped lightly, and the plants sprayed with the syringe whenever this can be accomplished without wetting the pistillate flowers. Should the weather prove dull a good amount of heat is kept in the hot-water pipes, and the floors of the house and leaves of the plants in the driest positions only are syringed.

As soon as a good set is obtained the plants may be thoroughly syringed twice daily in bright weather and once during dull days. When the fruits are beginning to swell freely early closing, with abundance of moisture, should be practised, as it not only hastens the growth of them, but also does much toward securing large handsome specimens. It is perfectly safe to close a Melon house at 2 P.M. during the hottest day in summer, provided abundance of moisture is used both on the floors and plants. Should evaporation speedily take place another syringing ought to be given an hour after on very bright days.

I have tried many methods of supporting the fruits, but consider none better than accomplishing it by means of three pieces of string or thick raffia grass tied to the wires and twisted together under the centre of the fruit; as the latter swells the strings can be slightly lengthened. I like to thoroughly examine the supports to every fruit, when colouring begins, to see that each is perfectly upright and secure; when this is not the case fine fruits sometimes have a provoking way of breaking away at the stem. To make them secure against this it is a good plan to fasten a piece of raffia grass around each fruit about half way up, twisting it round each of the vertical strings, and drawing it tight enough to fit close to the outline of the fruit; it is then perfectly safe from falling or breaking away at the stem.

Watering is without doubt one of the most important operations connected with Melon culture. No matter how well all other details are attended to, if the watering is improperly performed mediocre if not disastrous results will follow. During the early stages of growth before roots have become plentiful great care should be exercised in applying it, as it is better to err on the side of dryness than in the opposite direction; but when the fruits are about half grown roots become extremely active. Then if water is withheld for only a few hours after it should have been given a stunted tough-skinned fruit is the result, and frequently the plants show signs of distress for a long time after, and can only be prevented collapsing altogether by careful shading.

Perhaps the stage at which healthy Melon plants require the most water is when the fruit is netting, for by that time the soil has become thoroughly permeated with roots, and the slightest check caused through drought will then spoil the natural character of the netting. Instead of being small in the mesh and evenly marked all over the fruit, large cracks are produced here and there, through which a gummy exudation may be perceived shortly after water is given. The evil often does not end here, for many of the small roots having been destroyed the plant becomes unable to support a heavy crop of fruit without showing signs of flagging and with fewer roots; these being also lessened in activity, much less moisture is extracted from the soil, except on the surface, where evaporation is rapid. This often misleads an anxious cultivator, and induces him to apply water before it ought to be given, in the hope that flagging may be prevented; the soil then becomes thoroughly sodden and the plant succumbs. In nine cases out of ten this is attributed solely to overwatering, whereas that is only the secondary cause, the root of the evil being neglecting to water soon enough.

Withholding water while the fruits are ripening is, without doubt, very much overdone. If the plants are kept in good health, and a little growth allowed to extend, no lessening of the supply need take place till the fruits are evenly coloured, and then it should be only slightly reduced. When they give out a rich aroma I prefer to cut the fruits and place upon a dry shelf for twenty-four hours before sending to table. A good deal of discretion must be exercised as to the exact time when the fruits of each variety should be cut, for they differ considerably in that respect, according to the thickness of their skins. Hero of Lockinge requires to hang longer than any variety with which I am acquainted.—LABOR OMNIA VINCIT.

(To be continued.)

## CUCUMBERS FOR MARKET.

IN modern horticulture the tendency to simplify treatment without limiting production is very marked. Elaborate cultivation, once the rule, is now fast becoming the exception, and good returns can be secured without the extensive and complicated process formerly regarded as indispensable. The improvement I have indicated is easily seen in the rapid development of the Cucumber as an article of commerce.

The growing demand for Cucumbers, if it has not created a new industry, may safely be asserted to have made immense advances on an old one. Probably Cucumbers enter the markets now by the hundred where a few years back they did not amount to dozens, and their production increases largely yearly. On the other hand, I see no reason to doubt that the demand keeps pace with the supply. One point in the Cucumber grower's favour is the low price at which the fruit is sold, while the percentage of profit remains high. The average market price during the summer season may be fixed at 2s. per dozen, and they are extremely unlikely to decline below that figure, which I am inclined to think is the minimum.

Cucumbers are not much in request until April, at which time prices range high. The usual practice is to sow the seed in the first week of the new year. The plants are ready to put out about the middle of February, and come into bearing towards the end of March, and continue till June, when they are cut out and a second batch planted. By these means a continual supply of fruit is furnished until late in November. No bottom heat is used, the Cucumbers being planted on the ground in small hillocks, with hot-water pipes around but not under them, the heating power of which is sufficient to maintain a temperature of 68° in severe weather.

It would seem impossible to bring Cucumber plants into bearing before March without more elaborate treatment, bearing in mind how susceptible they are to checks. But a grower near Enfield has this year taken the lead by fruiting Cucumbers quite a month earlier than usual. No bottom heat was used, the plants being grown in the manner described above. Certainly the man is unrivalled in this particular branch of horticulture, having for some years been foreman in one of the large establishments owned by the Messrs. Rochford. The variety used was the Cucumber which bears the name of those noted fruit growers. The plants do not appear to have been at all weakened for future cropping by the ordeal through which they have passed.

Rochford's Cucumber is in universal request for market purposes in the north of London, and in many places has superseded Telegraph, which at one time was considered the best variety. In the neighbourhood of Enfield we have three of the Rochford Brothers' mammoth establishments and a host of smaller nurseries, in which Cucumber growing holds a prominent place. To judge by the constant additions made to their number of structures the trade is evidently in a flourishing state. I wish I could say the same of the plant nurseries. But I am sorry to add that little or no improvement is going on, and I have come to the conclusion that the supply of plants for market exceeds the demand. The expenses of a plant nursery are much heavier than the establishment devoted to Cucumbers, Tomatoes, or Grapes. The item for flower pots alone must amount to a considerable sum yearly, and for this there is no return, as when a plant is sold the pot is given in with it.—ENFIELDIAN.





## STRAY NOTES.

THOSE who have only taken to Rose-growing within the last six or eight years may probably never have had to prune their plants when in full leaf, as is the case this year in many places, and may be alarmed at the "bleeding" which naturally follows severe cutting down to ripened wood when the sap is so forward. There was some correspondence in the *Journal* on the subject in the last early spring we had (a long time ago!); and the general idea, with which I am quite in accord, was that there was little serious damage done, as the wounds soon heal. It is certainly a dismal sight to see the poor plants next day literally bathed in their own blood, and keeping the soil quite damp round them for several inches. I avoid it by the simple process of not going near them for a week or so, by which time they will have dried up, and then soon commence to break. I remember one year, when my Teas before pruning were a mass of foliage, with great shoots 6 or 8 inches long, that I rubbed off most of these two or three days before applying the knife with a view of checking the sap, but I do not remember that it had much effect in staying the bleeding.

I have noted one advantage of such an early spring in the comparative absence of grubs and caterpillars later on. I have always supposed that when the top buds break early the parent insects lay their eggs in these, which are happily cut away and consigned to the rubbish heap. We shall see if it is so on this occasion.

On April 7th I dug up or rather carefully uncovered and reinstated my Maréchal Niels and standard Teas which had been pegged down, buried and clamped last autumn, and at present I like the look of them. There is not a shoot injured by frost or damp, and they are very backward, having made no sign of growth; they, at least, can be pruned without any fear of bleeding. My Tea buds, which have wintered beneath the straw nightcaps, show a better percentage than usual, with an exception—those on old stocks. When many Tea buds fail in the winter I am sure rosarians of an economical turn of mind, like myself, are loth to throw away strong standard stocks, and so retain them for budding again; but it does not answer as a rule, at least for Teas. Why, when these old stocks make plenty of strong and healthy growth they should fail to take or lose their buds in the winter if they do take is one of the many things I cannot understand, but I have generally found it is so. This spring I have hardly a bud alive on the old stocks, whereas I have quite a fair percentage on those collected the winter before budding.

"Suburban" (page 280) will find that Roses on a south wall are not infrequently in bloom in April in favoured localities. I have had Maréchal Niel fine on the 26th, quite unprotected; but that was a long time ago.

Mr. D. R. Williamson (page 280) is quite in error in supposing that most of the English rosarians, with the exception of Mr. B. R. Cant, grow their Teas and Noisettes under glass. Most would have some in houses; but even Messrs. Harkness, in Yorkshire, grow almost all of theirs out of doors, and I think it may be said that all the principal English rosarians grow the large majority of their Teas entirely in the open air. Even those Teas exhibited at the Westminster National Rose Society's Show in June are almost invariably cut from plants in the open.

I think, too, that it is hardly correct, to be strictly accurate, to speak of the original of a sport as a "parent" Rose. Sports not infrequently revert, even after they have become what are called "fixed" sports. The best Baroness Rothschild that I cut last season came from a Merveille de Lyon plant, which had one or two pure white blooms on it at the same time. And as to Mrs. Paul, Mr. Williamson seems more "mixed" than ever. In the first place, this is not a sport but a seedling from Madame Isaac Pereire (who cannot very well be called "Isaac himself"); and also it seems rather hard on Mrs. Paul that its claim to be a pure Bourbon should be denied because Mr. Williamson has seen its seed parent wrongfully described as H.P. or H.B.—W. R. RAILLEM.

## MISS ORMEROD AND HER WORK.

A DAILY contemporary alludes as follows to Miss Ormerod and her work:—"Miss Eleanor A. Ormerod, who has just issued her sixteenth Report of Observations of Injurious Insects and Common Farm Pests, with Methods of Prevention and Remedy, is one of the most remarkable women of her time. She was born at Chepstow Park, near Sudbury, and from her childhood was excessively fond of observing both plant and animal life, for which the position of her father's property (her father, by the way, being a well-known Cheshire historian, Geo. Ormerod, D.C.L. and F.R.S.) with a mixture of cliffs and shore, woodland and cultivated land, afforded admirable opportunities. Successive illnesses, bringing with them the necessity of quiet occupation, gave also the opportunity, fully utilised, of much reading, enabling her to lay a foundation of

knowledge of botany, entomology, and agricultural chemistry, also of Latin and several Continental languages, and especially a facility in the use of the pencil and brush, all of which have proved of great service to her in her subsequent labours. In 1872 Miss Ormerod was chosen to represent British Natural History modelling from life at the International Polytechnic Exhibition, Moscow, but it was not till five years later that she commenced the series of annual reports that alone have made her name a 'household word' in the agricultural world. At present she carries on what is almost a Government department at her own expense. It is a pleasure to her to reply to any inquiries received from British agriculturists, and a sense of the fact that she has aided them in their struggles is all the reward for which she cares."

The sixteenth Report of Observations of Injurious Insects\* fully sustains the author's reputation as an ardent worker in collecting facts relating to the infections of field, forest, and garden crops, and diffusing information respecting them. It opens with a full page illustration of Turnip affected by the disease known as ambury, finger-and-toe, or club, caused by slime fungus (*Plasmodiophora brassicæ*), from a photograph, and a figure is given on page 148 of a "spindly and much-divided growth to which formerly the name of Finger-and-toe was sometimes given. This is in no way a diseased growth, rather the reverse." No one, therefore, can make a mistake by a comparison of the two illustrations between the diseased and healthy condition of the roots. Photographic illustrations (two) are also given of club or ambury in Cabbage roots, with representations of the spores and embryos of the fungus causing the mischief. We are told that gas-lime is a good preventive of this disease; also that "a mixture of superphosphate and kainit, and an extended system of cropping, will in general prove effective." The latter—change of crop—is (in our experience) the safest and (next to a large dose of gas-lime) the most effectual cure for this disease. Superphosphate is well known as the best manure for Turnips, and kainit by supplying salt (mainly) must strengthen the plant, and potash prove advantageous, particularly on light soils. Salt alone we have found practically useless, and quicklime, though useful against the slime fungus, liberates the fixed nitrogen-forming ammonia—the most volatile of elements. It is stated, however, by Miss Ormerod that "lime and soot have been found to answer for checking club presence," and an instance is given by Mr. Eyden as follows:—"When I first came here I had whole breadths spoilt of Broccoli and Cauliflowers, which have been more subject to attack here than any other green. The first year I was here I found I had got a bed of plants attacked; I pulled all up and burnt them. I simply sowed some lime on the ground and replanted it, dipping the roots of each plant in sooty water before planting it, and when taken up not one root was in the least affected. Since then [Mr. Eyden's experience extends over twenty-two years] I have always treated them in the same way, and have had very few clubs." This is simply the old fashioned gardener's preventive of club root in Brassicas during the past two centuries, and it is doubtful if the ambury or club root was caused by slime fungus, though the lime might be useful against its germs, and the soot acting as a preventive only of the club root caused by Turnip and Cabbage root-gall weevil (*Centorhynchus sulcicola*, Gyll.). These are different infections, as also is that caused by Turnip and Cabbage-root flies (*Anthomyia radicum*, Linn.). Our talented author has got a little "mixed" in her "Turnip and Cabbage-root attacks," and we suggest that they form three definite headings in future reports. The three forms are, however, treated in the sixteenth report in an able manner, but they would carry more weight were each put separately in the scales. These subjects form the first (a frontispiece) and the last in the report, except an appendix treating of Mangolds. The Mangold leaf-blister maggot, the larvæ of *Anthomyia* (*Chortophila*) *betæ*, Curtis, being fully treated with illustrations (the maggot being shown on part of what appears a Celery leaf) on page 83 of the Report, infestations being more prevalent in the south than in the north of England.

The attack of the larvæ of the Alder or white-barred clearwing moth is noticed as affecting Alder trees in Wales and ruining them, as we have also noticed in Flintshire over twenty years ago. Garden chafer, May bug, or Rose beetle is recorded as destructive to the foliage of Apple trees in 1892; also the larvæ of the Apple sawfly, which, though a common infestation, cause the young Apples to fall in shoals, the same thing occurring to Crabs. Asparagus beetle receives a generous share of attention; Cabbage aphid, Onion fly, Pea weevils, and root-knot eelworm in Tomato roots are liberally treated. The latter is stated to cause knots or galls on the roots of Tomato, Cucumber, Potato, Parsnip, Peach, Vine, Lettuce, and many other plants, which may be more or less correct, but the galls are in many cases perfectly innocent of eelworms. Nevertheless, root-knot eelworm (*Heterodera radicola*, Greef.) has proved destructive to the gardener's crops of Cucumbers, Melons, Vegetable Marrows, and Tomatoes, whilst the plantman often finds it destroys his Gardenias at the collar or neck by an abnormal gouty excrescence. Miss Ormerod mentions a Tomato grower that has suffered losses to the extent of tons of fruit. An excellent illustration is given of Tomato roots galled by attack of *Heterodera radicola* (two renderings of the specific name being given, the latter being Müller's). It is also called *Anguillula radicola*.

Mention is made of Lettuce as a trap for eelworms, it being sown as early in spring as possible, so that Tomato growers may sow the Tomato beds or borders with Lettuce in advance of planting the Tomato plants, and clear the Lettuce away with the eelworms, of course, and thus save the Tomato plants, otherwise no cure is known but "starving out" the



pests. How that is to be done, if they live on so many different hosts, is not made so clear as is desirable. The only safeguard we know is to expose the soil in which the plants are to be grown to a heat of not less than 212° so as to destroy the eelworms. In using trap plants care must be to remove all the roots on which the little knobs appear, and that means removing the uninfected as well as the attacked, for nodules are natural to some plants and never absent from them, in fact it is doubtful if they could exist without them. Growers, therefore, must learn the history of the microscopic objects so as to be able to distinguish infested soil from that free from parasitic germs, for the remedies are worse than the disease, as guidance by galled roots would mean the destruction of healthy as well as unhealthy plants. Trapping, also, is more likely to spread than limit the disease by supplying food upon which the enemy thrives, for who can pull up a Lettuce plant and not leave the major part of the little knobs on the roots behind? Gas lime is the best cure for eelworm, but it can only be applied to bare soil, and some time must elapse before the ground can be sown or planted again. Still it is an excellent disinfectant of soil from which plants have been removed that were infested with eelworm. So, also, is sulphate of iron, indeed all sulphates, but there is nothing so effective as a change of soil and crop. Tomato growers should not use the same soil year after year, but bring in fresh, free from eelworm infection, and this is what many of them do.

Black Currant gall mite appears to have found its master in Paris green, but how this can reach the insects in the galls is unexplained. Facts, however, are preferable to theory; yet it would be interesting to know for certain when the mites are likely to be killed by caustic lime—that is, when the mites are on the ground, and what they do there. These being seen in such hosts as we sometimes have represented as being present at the base of the bushes and on the scales of the buds passes our understanding, for though microscopic objects may be visible to the naked eye in the aggregate or in heaps as mildew appears like white dust or meal, it requires a straining of the imagination to see them individually with the best of pocket lens. Of course, the arsenic or the copper of Paris green may be absorbed by the plants in such quantity that their juices may kill the mites (which is doubtful), for it is certain it cannot otherwise affect them through the gall.

The bearing of these reports is not only to collate facts respecting the diseases of crops, but to interest all cultivators in matters essential to the most profitable cultures, leading them from the uncertainties and disadvantages of foul land to the known and substantial beneficence of clean crops. No less than thirty-six attacks of injurious insects, eelworms, and fungi are treated historically and scientifically, in a popular and exhaustive manner, with illustrations of infestations and the insects in the perfect or larval state causing them, besides the four beautiful full page photogravures of the slime fungus infesting Turnips and Cabbages, and Tomato plant attacked by eelworm, the whole embodying a record of diseases prevalent throughout this country in 1892, with methods for their prevention and remedy. It may be said that the sixteenth report surpasses in excellence of elucidation and information previous reports, which is saying a great deal, but not too much, for they get larger and better each year, and place all cultivators of farms, forests, and gardens under great obligations to the gifted author. We cordially recommend the sixteenth report as deserving of the careful perusal of all interested (and who is not?) in the cultivation of crops.—G. ABBEY.

### THE WAKEFIELD PAXTON SOCIETY.

THE annual dinner of the members of this Association was held in the Society's large room on the 12th inst., and was in all respects highly successful. The room was crowded, and the adjoining library had to be utilised as a means of affording food for the body as well as the mind. The esteemed President of the Society, Major Taylor, J.P., presided, and was supported by the Mayor of the city (C. J. S. Booth, Esq.), Mr. Alderman Milnes, and other public officials. The repast provided by Mr. Oakes of the Saw Hotel was an excellent one, the speeches delivered were much appreciated, and the beautiful singing of members of the choral union was greatly enjoyed.

The Wakefield Paxton Society has been established sixteen years, and consists of amateurs and gardeners, the former predominating. It is admirably managed, and its position as an active and useful educational organisation is generally recognised. If it continues increasing it will soon have 300 members. Forty-six meetings were held during the past year, all of an educational character, and the whole expenses were met by an outlay of a little over £30. An excellent library has been formed, and includes, as all such libraries should, valuable works of reference on gardening, national history, and scientific subjects. This is better than frittering money away on cheap manuals that members of such institutions can obtain for themselves. An extract from the annual report will indicate the character of the excellent Society and its work.

The Committee, in presenting this the sixteenth annual report, are pleased at being able to congratulate the members on the highly satisfactory position of the Society at the present time. The work of the past year has been of a distinctly progressive and beneficial character.

Taking in order of importance the weekly meetings, these have been well attended, the average attendance at each meeting being forty-one. The subjects treated of have been of a varied character, gardening and horticultural topics taking the lead, lectures on various scientific subjects, travels and other questions of general knowledge agreeably relieving the

programme of essays issued from time to time. Forty-six meetings have been held during the past year, and at forty of these a lecture or essay has been delivered.

We are pleased to note that an arrangement was made at the commencement of the winter session for the delivery of a series of lectures on "The Elementary Principles of Botany," by some of the members, who take a deep interest in the pursuit of this science. We are glad to report that these lectures have been highly appreciated by both classes of members—amateurs and professional gardeners—being recognised by them as a means of conveying and explaining the most important facts relating to the structure and functions of plants, which knowledge enables anyone to better perform and understand the practical operations of gardening. The discussions at all the meetings have invariably been of a highly interesting and intelligent character, and have been the medium for eliciting valuable information. The Committee desire to express their best thanks to members of societies in other towns for their assistance in the delivery of essays.

The main object of the Society being the promotion and diffusion of knowledge on horticultural and cognate subjects, the Committee feel that their efforts in this direction have been amply rewarded by the results named, and so long as this most important branch of the Society's work is carried on in the same vigorous manner which has been the case during the past year, the members need not fear for the stability and welfare of the Society, which has been built up on this basis being maintained.

The members' roll now stands at 286, being a net increase for the year of eighteen; twenty-nine new members have been made and eleven struck off the list, seven by reason of death and four by removal from the city.

In last year's report the offer of the *Journal of Horticulture* was referred to, and it was then announced that the competition for an essay on "Education on Gardening," would be open to all the Yorkshire societies. This has taken place and we are pleased to note that a silver medal was awarded to Mr. Thomas Garnett for his essay on the subject named. A second medal was also awarded to Mr. Smith of Sheffield, both essays being considered by the judges as excellent. We congratulate both gentlemen on their success, and trust the essays, which have been published, have proved a benefit to the gardening profession.

The medals referred to were presented in appropriate terms by the President, and the recipients in acknowledging them were much applauded. Mr. J. Wright proposed the toast of the Paxton Society. The chief speakers during the evening were the President, the Mayor, and Messrs. J. Haigh (Sheffield), C. D. Watson, G. W. Fallas (Hon. Sec.), Herbert Chapman and Alderman Milnes. The proceedings were most enjoyable throughout, and the Paxtonians are looking hopefully forward to the future.

### THE CONIFERS AT DROPMORE.

[A paper by Mr. A. CECIL BARTLETT, Foreman at Dropmore Gardens, read before the Devon and Exeter Gardeners' Mutual Improvement Association on April 5th.]

THE planting of the Conifers at Dropmore was commenced early in the present century by Lord Grenville, but the first Conifer planted by him was a *Cedrus Libani* in 1792, and is now a splendid specimen 104 feet high, with a girth of 12 feet 9 inches at 3 feet from the ground. Contrary to general expectation the soil in which the trees are planted is not very good. It is chiefly light and gravelly, the substratum gravel and sand, into which the trees root freely. And unlike many pinetums where the trees are grouped mostly in a confined area, here they are scattered about, some having the protection of forest trees, and planted without any formality or design. Some of the best trees have been periodically assisted by top-dressings of clayey loam, old potting soil, and any refuse likely to decay.

*Araucaria imbricata* (the Chili Pine) has been planted largely. The finest specimen is over 70 feet in height—a noble tree, with branches sweeping the ground on all sides; it has a spread of branches 38 feet in diameter, and in shape is a perfect cone. It is a male tree, producing numbers of pollen-bearing catkins every year. This tree has an ideal position—sheltered, yet not crowded, planted on a knoll about 60 feet from the edge of a lake. The spot on which the tree is planted was once a gravel pit, which was filled up when the lake close by was made; therefore it has the benefit of a good depth of soil and perfect drainage. The tree was bought at a sale in the Chiswick Gardens in 1829 and planted in 1830. Amongst the *Araucarias* planted at Dropmore the majority of those bearing pollen catkins grow more vigorously than those producing fertile cones. In a group planted 1842 the largest is a male tree over 50 feet in height, fully 12 feet taller than the female trees, one of which bore thirty fertile cones in 1891.

Noteworthy at Dropmore is the Cedar avenue, composed of 140 trees of *Cedrus Libani*, planted some eighty years ago, and now averaging over 85 feet in height and 7½ feet in girth, and, although planted 50 feet apart, and 40 feet in the lines, the effect would have been greater now if the trees had been allowed 20 feet more room each way. Viewed from the carriage drive from the Taplow entrance the effect is grand and imposing. *Cedrus deodara*, the Himalayan Cedar, thrives wonderfully well. In fifty-three years one specimen has attained a height of 72 feet, with a girth of 9 feet 9 inches. The largest *C. deodara* was destroyed by lightning in 1881, and was then considered the finest specimen of its kind in the kingdom. The trunk near the ground measured 12 feet 3 inches in circumference, and good boards 38 inches in width were cut from it. *Cedrus Libani argentea* makes a beautiful tree; when the sun is shining upon it it bears a strong resemblance to *C. atlantica*, so much so that it is difficult to distinguish any great difference between the two species, except that the points of the branches of *C. L. argentea* are not so erect as those of *C. atlantica*.



The finest tree of *C. atlantica* was planted in 1843, and is 64 feet high and 5 feet 10 inches in girth, well clothed, and of splendid shape. *C. Libani argentea* measures 84 feet in height, with a girth of 10 feet.

The genus *Abies*, almost without exception, thrives remarkably well, and the majority of them are branched to the ground. The finest of this class is a tree of *Abies Douglassi*, the Douglas Fir, which was planted in 1830, and is now over 120 feet in height, and has a girth of 11 feet 9 inches, and branches sweep the ground at a diameter of 64 feet. The seed from which this tree was raised was sent to Lord Grenville by the Royal Horticultural Society in 1827, and although snowstorms in the winter of 1880-81 had broken several of the upper branches, the specimen is fast outgrowing the damage it sustained. It is the parent of several trees planted in different parts of the estate; and one, which was planted 1843 is 78 feet high, and has a girth of 8 feet 2 inches, and a spread of 39 feet; a perfectly formed specimen.

Before going further I may state that the "girths" of all trees mentioned in this paper have been taken at 3 feet from the ground. *Abies Albertiana*, Prince Albert's Fir, planted in 1861, is now over 60 feet in height, girth 5 feet 3 inches; a beautiful specimen, its branches touch the ground, and it has a spread of 40 feet in diameter. *A. amabilis*, planted in 1847; height 48 feet 6 inches, girth 6 feet 9 inches. *A. Brunoniana*, the Indian Hemlock Fir, planted in 1847; height 42 feet, circumference of branches at base 134 feet. *A. cephalonica*, the Greek Silver Fir, planted in 1843; height 71 feet, girth 8 feet 7 inches, a very fine tree. *A. concolor*, planted in 1857; height 51 feet, girth 5 feet 9 inches; a very good specimen; was bought at Chelsea when 3 inches high for 3 guineas. *Abies grandis*, the tall Silver Fir, planted in 1861; height 64 feet, girth 6 feet 6 inches, spread of branches 55 feet. A very handsome tree, has leaves of a rich green, the branches touch the ground on all sides. *A. Menziesi*, Menzies' Fir, planted in 1841; height 73 feet, girth 7 feet 3 inches of clean growth; very symmetrical. *A. nobilis*, the Noble Fir, planted in 1835; height 71 feet, girth 7 feet 9 inches. A beautiful, well clothed, branched to the ground. *A. pectinata*, the common Silver Fir; height 94 feet, girth 8 feet 6 inches. *A. pindrow*, the Indian Silver Fir; rarely attains any height in this country, it begins to grow early in the spring, and is usually nipped by the frosts later in the season. *A. pinsapo*, the Spanish Silver Fir, planted in 1843; height 65 feet, girth 6 feet 10 inches. *A. Smithiana*, the Indian Spruce, planted in 1843; height 61 feet, girth 7 feet, spread of branches 38 feet in diameter. A splendid tree, branches hanging on the ground. *A. taxifolia*, planted in 1841; a well grown tree about 60 feet in height.

According to the "Genus Pinus," a work by Lambert, published in 1832, the Dropmore collection of Pines was then the finest and most complete in the kingdom. The majority of that collection have gone the way of all trees, but there are a few old veterans left, and they look grand and noble in their old age, more especially on a bright day in early spring, when the sun brightens up the red tints of the bark, which is relieved by the green of the leaves above.

Amongst the Pinuses are *Pinus Benthamiana*, a variety of *P. ponderosa*, planted in 1843; height 56 feet, girth 6 feet 3 inches, one of the most strikingly handsome trees of the genus, its long leaves are of a most beautiful green. *P. excelsa*, the Himalayan Pine, planted in 1845; a fine tree, well clothed, growing healthily and bearing numbers of cones annually. *P. insignis*, the "Remarkable" Pine, planted in 1839, height 90 feet, girth 11 feet 2 inches, usually considered very tender and delicate, but here it grows robustly and is rarely injured by frosts. *P. Jeffreyi*, Jeffrey's Pine, height 47 feet, girth 4 feet 6 inches. *P. escarene*, a variety of *P. pinaster*, planted in 1841, raised from seed produced here from a tree presented to Lord Grenville by Lord Aberdeen. *P. Laricio*, the Corsican Pine, planted in 1829, height 96 feet, girth 9 feet 9 inches, a grand tree, a giant amongst Pines. *P. Lambertiana*, the Sugar Pine, planted in 1843, height 71 feet, girth 8 feet 9 inches, a splendid specimen. *P. ponderosa*, the western Pitch Pine, planted in 1829, height 85 feet, girth 8 feet 9 inches, a good timber tree with a clean straight bole. *P. Pallasiana*, the Crimean Pine, height 96 feet, girth 11 feet. *P. Pyrenaica*, the Pyrenean Pine, height 86 feet, girth 9 feet. *P. Strobis*, the Weymouth Pine, a very large tree. *P. Strobis alba*, a variety of *P. Strobis*, but with more silvery leaves, very brittle branches.

Another noteworthy specimen is *Cryptomeria Lobbi*, planted in 1843, which has attained a height 53 feet, and perfectly straight. Of *Cryptomeria japonica*, the Japanese Cedar, there are also some fine specimens of good shape and with branches to the ground. *Cunninghamia sinensis*, no date, height 39 feet, girth 4 feet 10 inches, branches within 5 feet of the ground, growing well, but some of the lower branches die annually. *Thuja gigantea*, Lobb's Arbor Vitæ, height 62 feet, girth 6 feet 6 inches, a very fine specimen. *Sequoia sempervirens*, the Californian Redwood Tree, planted in 1845, has made a very fine tree, fully 80 feet in height and branches hanging on the ground. *Taxodium distichum*, the Distichous Cypress, grows freely near the water's edge. *Wellingtonia gigantea*, the Mammoth Tree, planted in 1857, height 67 feet, girth 11 feet 3 inches, and another specimen planted in 1862, 62 feet in height, girth 12 feet; taking age into consideration these are two very fine trees, the branches touch the ground and the trees are growing robustly.

The collection also includes good sized healthy trees of *Abies canadensis* (the Hemlock Spruce), *A. nigra* (the Black Spruce), *A. carpatia*, *A. J-zensis* (the Jesso Fir), and *A. Nordmanniana* (Nordmann's Fir). Some specimens of *Cupressus Goveniana* (Gowen's Cypress), are strikingly beautiful now, covered with numerous yellow male catkins,

bearing immense quantities of pollen, which gives the trees a distinctly decorative appearance.

*Cupressus Lawsoniana* (Lawson's Cypress), *C. thurifera*, *C. funebris* (the Funereal Cypress), *C. macrocarpa* (the Large-fruited Cypress), *Cephalotaxus Fortunei*, *Glyptostrobilus heterophylla* (the Chinese Water Pine), *Pinus monticola*, *P. montana* (the Mountain Pine), *P. Inops* (the Scrub Pine), *P. pungens* (the Table Mountain Pine), *P. pinaster* (the Cluster Pine), *P. neoza*; *Retinospora pisifera* (the Pea-fruited Retinospora), a very good specimen; *Taxus fastigiata* (the Irish Yew), *T. Dovastonei* (the Westfelton Yew), and many other trees too numerous to mention are also well represented.

Young trees have been planted from time to time, and the majority are growing strongly, notably some specimens of *Thuia dolabrata*, *T. dolabrata variegata*, *Retinospora squarrosa*, *Thuia gigantea*, *Juniperus japonica alba*, *Pinus pinea*, all planted in 1872. Planted at a more recent date are *Abies amabilis*, *A. bracteata*, *A. Hookeriana*, *A. orientalis*, *A. polita*, *A. Veitchi*; *Cryptomeria elegans*, *Juniperus drupacea*, *J. virginiana Schottii*; *Retinospora obtusa aurea*, *R. obtusa gracilis*, *R. pisifera aurea*, *R. plumosa aurea*, *R. filifera*; *Thuia occidentalis*, *T. aurea*, *T. filiformis*, *T. Standishi*, and *Sciadopitys verticillata* (the Umbrella Pine).

In concluding this short account of the Dropmore collection of trees I may mention that the largest *Araucaria* is supposed to be the finest in the northern hemisphere, and this opinion is corroborated by Professor Sargent and many other tree enthusiasts that frequently visit the estate, which is always open to visitors on week days.

Tree planting in days gone by was a much more expensive hobby than it is now, as witness the recorded price paid for many here, of which I may instance the following history of one of the *Araucarias* supposed to have been raised from a cutting taken from the original tree in Kew Gardens, and by some means passed into the nursery of the late Mr. Knight, King's Road, Chelsea, now Messrs. J. Veitch & Sons:—"Lord Grenville knowing this sent his gardener to purchase it at any price, and he gave ten guineas for it—a small branch with a few roots." How many employers now would purchase trees at such fancy prices? Gardening has taken another turn, Orchid fanciers being now in power as far as fancy prices are concerned. Let us hope that at no distant date ornamental tree planting will again come to the front, and all the newer introductions find a congenial home in every Devonshire estate and others throughout the country.

## ARUMS.

FOR various forms of church and home decoration in early spring these plants, with their glossy leaves, and broad white spathes, are indispensable, and fortunately they are easily produced. The only point upon which cultivators appear to differ is that of planting out the roots in summer, or keeping them in pots. I favour the former plan, as a decided gain is effected in labour. When the plants are kept in pots they need much water during the hot days of summer, even when partly rested, as is the practice of many persons. Our plants opened their first spathes in December, and have continued to give a supply ever since, culminating in a goodly number at Easter, and we have promise of more for three weeks to come.

Our method of growth is briefly this. Plants now in 10-inch pots are divided mainly into single crowns. Those in 8-inch pots we plant entire; these were the single crowns of last year's planting, and they make the largest specimens for the next season. We thus have plants of various sizes. A border having a western aspect is chosen for the summer quarters, and as the soil is retentive watering is reduced to a minimum. A small quantity of manure is added when digging the ground deeply in the autumn. The plants grow freely, and ample space is provided to prevent the growth becoming weakened by overcrowding.

When potting, towards the end of September, a mixture of strong turfy loam and horse manure is employed, two parts of the former to one of the latter. Shade is provided for a few days after potting, as the roots are reduced to enable us to get them into the desired pots. The plants are stood on the north side of a high wall, and well syringed several times daily. When the roots have fairly taken hold of the new soil stimulants are liberally supplied. Nothing is better than liquid made from cow manure and soot. Such a gross feeder is this *Calla* that it is difficult to give the plants too much water when the drainage is perfect.—E. MOLYNEUX.

## AIDS AND HINDRANCES IN FRUIT CULTURE.

MUCH has been said and written respecting fruit culture and the fruit supply, and a vast amount of useful information has been disseminated through the Press and by Mr. Wright's gold medal prize essay, which should be bought and read by all who desire to make fruit culture profitable. I have found mixed plantations of fruit trees the most satisfactory—viz., Apples, Pears, and Plums, with Gooseberries for picking green, planted in rows at 4 feet apart between the trees, to be cut out or replanted at a greater distance when too thick. The value of mixed plantations was well shown last year in some parts of the country, where Pears and Plums were failures, whilst Apples were a splendid crop, while in other parts where Apples were a poor crop Plums and Pears were plentiful. Gooseberries can almost always be



depended upon for a crop, which fetch a good price picked green if only very early sorts are grown.

Maiden fruit trees are the best to plant where time and money are not expected to yield immediate results, and where it is intended to crop between the trees for a few years. On the other hand, splendidly rooted, strong, healthy bearing trees can be had from nurserymen, either as standards or dwarf bushes, at from 2s. 6d. to 3s. 6d. each, which will return an immediate per cent. on the outlay; but fruit growing, like everything else, is made profitable or otherwise according to the amount of care and practical intelligence which is bestowed upon the trees. The greatest difficulty I have found with the cottagers and farmers in planting fruit trees has been the first cost in purchasing trees. Bush trees are best for cottagers, and now that small holdings and allotments are being multiplied it is to be hoped that nurserymen will encourage amateurs and cottagers to buy well tried sorts of fruits by making the price per dozen of Strawberries, especially the newer varieties, as reasonable as they can. Of late I have often been applied to as to the price per dozen of new varieties of Strawberries in various catalogues, but when they have seen the difference between the price per 100 and per dozen they have exclaimed that nurserymen do not encourage the small grower to purchase new sorts.—JOHN CHINNEY.

## ROYAL HORTICULTURAL SOCIETY.

APRIL 11TH.

SCIENTIFIC COMMITTEE—Present: Dr. M. T. Masters (in the chair); Mr. Blandford, Professor Oliver, Mr. Michael, Mr. Wilson, Dr. Bonavia, Sir J. T. D. Llewelyn, Rev. W. Wilks, Rev. G. Henslow, Hon. Sec.

*Californian Oranges*.—Dr. Bonavia showed samples of this newly imported fruit. They are peculiar in having the rind open above, with a small Orange protruding from the apex. It appears to be an established variety of "carpellary multiplication," though incapable of propagation by seed, as these Oranges are seedless. It is of common occurrence in the variety called "Mellarose"—("Teratology," by Dr. M. T. Masters, p. 134).

*Gentiana acaulis*.—Mr. Wilson exhibited about a dozen flowers of this plant, showing variations in the colours, from lavender to the deepest blue. Mr. Michael remarked that he had noticed very many about 2000 feet above Innsbruck of the pale blue variety, the pink coloured variety being rare. Mr. Wilson's were specimens cultivated at Weybridge and Wisley.

*Oxlip, var.*—Dr. Masters exhibited an umbel of the true Bardfield yellow Oxlip, *P. elatior*, which is rare in Britain; and a red-flowered variety, from a clump originally introduced into his garden together with the former, which has hitherto borne only yellow flowers.

*Grammatophyllum with Spinescent Roots*.—He also showed a specimen of the roots of this Orchid, remarkable for their much-branching character, the longer roots being covered with short spinescent branches half an inch in length. The thicker roots penetrated into decayed vegetable matter, developing absorbent root hairs, confirming the suggestion of Professor Oliver that the peculiar development was an adaptation to a saprophytism. The Secretary suggests that the short spiny lateral roots may be arrested conditions, in consequence of their not having been buried in any nourishing material.

*Acacia Galls*.—Remarkable specimens were received from Baron von Müller from Australia. They were referred to Mr. Blandford for examination.

*Richardia, Monstrous*.—Mr. Sheppard of The Toddington Orchard Company sent a specimen, one leaf of which was white like a true spathe. In another case there was a small supplementary spathe and spadix springing from the axil of a second spathe. Dr. Masters observed that if this could be perpetuated there might be a succession of bloom from the same stalk.



### A VALUABLE ORCHID.

By some it is thought that the days for "fancy" prices for Orchids are numbered amongst the things of the past, but such is not the case. At the Quorn House sale recently a plant of a very fine variety of *Cattleya Mendeli*, with thirty-two pseudo-bulbs, eight of these with sheaths, was sold by Messrs. Protheroe and Morris for the sum of 220 guineas, the purchasers being Messrs. Hugh Low & Co. of Clapton.

### CŒLOGYNE SANDERÆ.

THIS is a charming Orchid, and is quite distinct from the other species of *Cœlogyne*. As will be seen by referring to the illustration (fig. 59), the flowers are small, and are borne on an erect spike. The petals and sepals are creamy white, with a faint tinge

of lemon yellow. The lip is white, with a beautifully fringed margin, orange yellow centre, surrounded with longitudinal ridges of brown hair-like filaments. It is an exceedingly pretty species, and justly merits the first-class certificate awarded it by the Orchid



FIG 59.—CŒLOGYNE SANDERÆ.

Committee of the Royal Horticultural Society on Tuesday, March 14th, when it was exhibited by Messrs. F. Sander & Co., St. Albans.

### PHALÆNOPSIS SCHILLERIANA VESTALIS.

ALBINO forms of the beautiful *Phalænopsis Schilleriana*, says "The Orchid Review," are excessively rare. The one above named was described by Reichenbach upwards of ten years ago from the collection of Messrs. Hugh Low & Co. of Clapton. A plant was exhibited by them at the meeting of the Royal Horticultural Society held on February 14th last, and was deservedly awarded a first-class certificate. It is said to be the only plant known in England. The flowers are snow white, with the exception of some light brown spots on the inner halves of the lateral sepals, a few yellow-brown ones near the base of the side lobes of the lip, and a yellow crest. It is a chaste and very beautiful form.

The variety *immaculata* differs in having no spots anywhere, the crest alone being pure yellow. There is, however, a faint flush of pale rose sometimes present in the flower. It was described by Reichenbach as long ago as 1875 from the collection of J. T. Barber, Esq., of Spondon, near Derby, having been obtained from an importation made by Messrs. Hugh Low & Co. Another plant flowered in February, 1891, from an importation made by the same firm. They contrast effectively with flowers of the ordinary rosy form.





**EVENTS OF THE WEEK.**—Next week will be a busy one with horticulturists. The Committees of the Royal Horticultural Society meet at the Drill Hall on Tuesday, April 25th, particulars of which are given elsewhere. On the same day, and at the same place, the Exhibition of the National Auricula and Primula Society will take place, whilst the Show of the Manchester Royal Botanic Society opens on that day at Manchester. The second spring Exhibition of the Royal Botanic Society will be held in the Gardens, Regent's Park, on Wednesday, 26th; and the annual dinner of the Royal Gardeners' Orphan Fund takes place in the evening of that day. The Royal National Tulip Society will hold a meeting on Saturday, 22nd, at Manchester, as notified in a paragraph below.

— **THE WEATHER IN LONDON.**—With the exception of a very slight fall of rain on Sunday evening we have again to record another dry week. Monday proved cold and dull however, but Tuesday opened bright and mild, similar weather continuing on Wednesday, and at the time of going to press. Rain is needed in the south.

— **WEATHER IN THE NORTH.**—On the night of the 11th we had 4° of frost, the two succeeding days were bright and cold. The unusual drought gave way on Saturday afternoon, and since then a great deal of rain has fallen. This changed to snow for some time on the forenoon of Sunday, and this morning (18th) is very dull, raw, and cold, with wind in N.E. The effect of the rain on pastures is already apparent.—B. D., *S. Perthshire*.

— **THE ROYAL NATIONAL TULIP SOCIETY.**—The next meeting will be held on Saturday, April 22nd, at the Bull's Head Inn, off Market Place, Manchester, at 3 o'clock in the afternoon, to fix the day of Exhibition, to appoint judges, to revise the schedule if necessary, and to transact any other business. Members who cannot attend are desired to write, stating the date they prefer for the Exhibition, and any further suggestions they make will be fairly considered. Mr. James W. Bentley, Stakehill, Castleton, near Manchester, is the Honorary Secretary.

— **ROYAL HORTICULTURAL SOCIETY.**—We are requested to state that the next meeting of the Royal Horticultural Society on April 25th at the Drill Hall, James Street, Victoria Street, Westminster, promises to be of exceptional interest in every way. Besides Daffodils, Orchids, hardy plants, fruits, &c., the members of the National Auricula and Primula Society will bring their choicest plants, which will be sure to attract universal attention. At 3 P.M. the visitors will have an opportunity of hearing a lecture on "Alpine Plants" by Mons. Henri Correvon of the Jardin d'Acclimatation, Geneva. The lecture on "Chemical Questions Concerning the Soil," by Professor Cheshire, has been postponed until May 9th.

— **THE DODWELL TESTIMONIAL FUND.**—We are glad to learn that the funds for the above testimonial will permit of a handsome sterling silver tea and coffee service being presented to Mr. and Mrs. Dodwell on the occasion of their golden wedding; but as the limits of Mr. Dodwell's house are too small to permit of a large gathering, and Mrs. Dodwell's health not being such as to allow her to venture on having a garden party so early in the season, it has been proposed to send the service to Mr. and Mrs. Dodwell for the 20th, the anniversary of their wedding day, and that the formal presentation, with a salver or any other piece of plate purchased from the balance of funds, shall be made at the annual gathering of the Carnation and Picotee Union in Mr. Dodwell's garden on August 1st. This the Committee hope will enable as many of his friends as possible to take part, and all are invited to be present on that occasion.

— **DULWICH PARK.**—Residents in the district immediately surrounding this beautiful park must recognise the pleasures and benefits it has for them. At the present time many trees are in full bloom, and during the past two or three weeks the beds have been gay with Hyacinths and other spring-blooming plants. The robust health and cleanliness of the whole show how thoroughly fitted is Mr. Moorman for the position which he fills.—F. W. W.

— **HARLESTON HORTICULTURAL SHOW.**—We are requested to say that the Harleston Horticultural Show will be held on Tuesday, July 11th, and not as previously fixed.

— **SUPERINTENDENT OF EPPING FOREST.**—We are informed that Mr. Frank M'Kenzie, third son of the late Major M'Kenzie, has been appointed to succeed his father as the Superintendent of Epping Forest.

— **GARDENING APPOINTMENT.**—After ten and half years' service as gardener to the Rev. W. Elmhirst, of Elmhirst, near Barnsley, Mr Sidney Ballinger has been appointed gardener to T. Fox, Esq., Harbro Hill House, Barnsley.

— **THE WEATHER IN WEST YORKSHIRE.**—Rain fell here (Bingley) on the 15th and 16th inst. Yesterday (17th), and to-day have been mild and warm. Outdoor fruits promise a plentiful return, especially Pears and Cherries.—T. H. B.

— **DEATH OF MR. JOB COLE.**—We regret to hear of the recent death of Mr. Job Cole, of Sutton Coldfield, formerly of the Perry Bar Nurseries. Mr. Cole was at one time an assistant at the Birmingham Botanic Gardens, when Mr. Donald Cameron was the Curator.

— **EARLIER OPENING OF KEW GARDENS.**—An attempt is being made to induce the First Commissioner to reconsider his decision in regard to the earlier opening of Kew Gardens. The Kingston Town Council has appointed a deputation to wait upon Mr. Shaw Lefevre, and other authorities are taking the matter in hand.

— **MR. ALEXANDER RITCHIE,** Kelvin House, South Lambeth Road, and of Steven Bros. & Co., Manufacturers of Hot Water Apparatus, Upper Thames Street, has been appointed by the Lord Chancellor, on the recommendation of the Lord Lieutenant, the Duke of Westminster, a Justice of the Peace for the County of London.

— **FRUIT TREES AT EARL'S COURT.**—Messrs. J. Cheal & Sons, Crawley, are preparing an interesting exhibit at the Gardening and Forestry Exhibition at Earl's Court. This consists of various phases of fruit culture. They will show an orchard, market plantations, and kitchen gardens and walls, and the various methods of planting, pruning, and training of fruit trees.

— **THE NARCISSUS FLY AND AMARYLLIS BULBS.**—Perhaps some of your readers can recommend some means of protecting Amaryllis bulbs from destruction by the Narcissus fly (*Merodon*), which destroys so many Daffodils and Narcissus. I have lost three-fourths of my Amaryllis bulbs this year through it. Although most of them had been soaked in a tub of soot water for hours last autumn the grubs did not seem to suffer.—E. D'OLIER.

— **NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.**—The monthly meeting of the members of the above Society was held on Wednesday last in the Wood Memorial Hall, Mr. A. Heslop in the chair. Mr. Geo. Walker of The Cedars, Low Fell, read a very interesting and thoroughly practical paper on Tomatoes, after which was a lengthy discussion. The benevolent scheme was allowed to stand over for further consideration until next meeting. Votes of thanks then terminated the meeting.

— **CARDIFF HORTICULTURAL SOCIETY.**—The fifth annual Exhibition of this Society will be held in the Sophia Gardens, Cardiff, by the permission of the Marquis of Bute, K.T., on August 15th and 16th. A liberal schedule of prize has been prepared, there being no less than 168 classes in all divisions. For twelve stove and greenhouse plants in bloom, distinct varieties, prizes to the value of £12 first, £8 second, and £4 third are offered, and these should bring forth a good competition. Mr. H. Gillet, 66, Woodville Road, Cardiff, is the Secretary.

— **WIDCOMBE INSTITUTE HORTICULTURAL CLUB.**—Last week the members of the Widcombe Institute Horticultural Club held a bulb show and social meeting at the Church Room, when a numerous company accepted invitations. The exhibits were staged in the centre of the hall, and many of the contributions were of exceptional merit. The group of miscellaneous plants lent by Messrs. Cooling & Sons, Bath, was one of the most noteworthy features of the Exhibition, and came in for general admiration. The following certificates were also presented:—For two groups of plants, Mr. T. J. Tate; four Crown Imperials, Mr. H. J. Troutt; five Auriculas, Mr. H. J. Troutt; box of Roses and Pansies, Mr. F. Hooper; and another to Messrs. Cooling & Sons for their collection of flowering plants.



— FROSTS IN WILTS.—On Thursday night, the 13th inst., the thermometer registered 7° of frost, the 14th 9° also, and being followed by early bright sunshine damaged the Plum, Cherry, and Apple blossoms, which are expanded.—G. F., *Trafalgar, Salisbury*.

— A FLOWER SHOW AT THE PEOPLE'S PALACE.—It is reported that preparations are being made to hold a Flower Show at the People's Palace in the East of London on July 13th, 14th, and 15th next. A Committee is being formed to carry out the project, prominent workers including the Marquis of Lorne and Sir Charles Fremantle. A novel attraction will be a representation of a battle of flowers.

— LAVENDER IN AUSTRALIA.—It is stated that Lavender is now extensively cultivated in South Australia for economic purposes. The plant at one time was regarded as a nuisance by the settlers, as their cattle would not eat it. Acting on the advice of Mr. Molineux, Secretary to the Agricultural Bureau of South Australia, a settler has planted a considerable area, and intends to distil the scent from the flowers.

— A GRAFTED PELARGONIUM.—Mr. H. L. Jones records, in the "Botanical Gazette," an example of a graft-hybrid between two different varieties of Pelargoniums, a red and a white. In several successive years the flowers partook of the characters of both parents; some were pure red, and others pure white; others had some of the petals white, others red; while in others again the petals were red mottled with white, or white mottled with red.

— CHIONODOXA TMOLUSI.—Through an error this appears as C. Smolusi on page 290, and in correcting this I may also remark that there appear to be two varieties doing duty under this name. The form in my garden is of finer colour than C. Luciliæ, but it would appear that there is another form of inferior colour to C. Luciliæ, and consequently the merits of C. Tmolusi are not appreciated by some. My opinion of C. Tmolusi is corroborated in a letter I had the other day from one of the keenest growers of bulbous flowers in England. He speaks highly of this variety.—S. ARNOTT.

— ST. BRIDGET ANEMONES.—Mr. James Harris, Blackpill, Swansea, writes:—"In July last year Mr. Pettigrew sent you an account of the St. Bridget Anemones here. This evening (April 13th) I have forwarded you a few blooms and foliage that you may see what they are. The Anemones are charming now, and have been for the last month, and I expect them to keep flowering for another two months. I am still selecting them, and I hope to have them perfect in a season or two, as I have much seed in hand, and now I consider the right time to sow for next year's display." [The Anemones were the best of the kind we have seen. The flowers were magnificent, fresh, varied, and brilliantly coloured.]

— DECIDUOUS MAGNOLIAS.—Although varieties of this section may be much safer as regards protection of their blossoms from frost when growing against a wall, I think there is no comparison between a tree managed in this way and one allowed to grow away at will in a favoured spot in the shrubbery or even isolated on the lawn. Owing to their blossoms expanding before the leaves they are by this means shorn of some of their attractive quality when on a wall. Growing against a wall no plant that flowers before its foliage is developed has the same attraction as an evergreen in bloom, the dull red of the bricks make a hard contrast to the flowers. I agree with Mr. Dunkin (page 276) that the plants when growing in the open are very often destroyed by frost when even in the bud state, but this year they so far have escaped. A tree of the variety *purpurea*, nearly 18 feet high and 15 feet across, growing in an open spot in the shrubbery, is clothed from top to bottom with extremely large blossoms, not one of them touched by adverse weather so far. Although *M. conspicua* is a favoured species I prefer the purple form known as *obovata discolor* or *purpurea*. The deep flush of purple at the outside base of each flower, extending upwards and fading entirely away before the tips are reached, is more attractive, and being rather later in development than *conspicua* it more often escapes the frost than the white blooms. *Soulangeana* is another showy variety, a hybrid between *conspicua* and *obovata*, having the deep purple shade of the latter, but rather more intensified, and having the full rounded flowers of the former. *Soulangeana* is fully a week later in opening its flowers than *purpurea*, and for that reason useful both as giving a longer succession of blossoms and escaping frost as well. In perfume this is perhaps the most pleasing of all.—E. M.

— THE ROYAL GARDENERS' ORPHAN FUND.—At the monthly meeting of the Committee held recently, the Hon. Secretary announced that H.R.H. the Duchess of Albany had permitted her name to be announced as a supporter of the Fund; also that H.R.H. the Duke of York, K.G., had sent a donation of £5. Several other subscriptions were also announced. The annual dinner of the supporters of the Fund takes place at St. James' Hall, Regent Street, on Wednesday, April 26th, when Baron Ferdinand de Rothschild, M.P., will preside.

— THE "BURNING TREE" OF INDIA.—At a recent meeting of the Royal Botanic Society of London, among the Orchids and other plants in flower shown was a specimen of *Laportea gigas*, the "Burning Tree" of India. Both leaves and stems of this plant are covered with stinging hairs after the manner of the common Nettle, but of a far more virulent nature. It is stated that when touched the sensation felt is as of being burnt with red-hot iron, the pain extending over other parts of the body, and lasting for a fortnight. Little or no mark is to be seen on the skin, but, for some time after, should cold water touch the part, the pain returns with all its original intensity.

— WEATHER AT SWANMORE.—We have had forty-three continuous days now without a drop of rain, a fact unprecedented within the memory of the oldest inhabitant at this season of the year. This spell was broken on Sunday (16th) by a light shower, which registered 0.04 inch. On Tuesday (11th) at 6.30 A.M. the thermometer dropped to 27°; on each of the two successive mornings to 29°. With the exception of the earliest expanded Strawberry blossoms, which are blackened, I do not think much harm has been done to the fruit crops, of which there is an abundant promise of all kinds, in this neighbourhood.—E. M.

— THE WEATHER REPORTS.—Mr. J. Easter, Nostell Priory Gardens, Wakefield, writes:—"The monthly reports of the weather by Mr. W. H. Divers of Ketton Hall Gardens, greatly interest me, as they nearly always tally with the register kept here. Perhaps you will allow me to ask Mr. Divers, through the *Journal*, the height his thermometers are from the ground; also if the mean daily minimum is taken from the thermometer hanging the same height as the maximum, and not from the gross minimum? The mean for the month of March here was 45°, that is, taking the maximum and minimum thermometers hanging beside each other. We measured 0.22 of rain only for the month of March."

— AN OLD APRICOT TREE.—In the garden connected with the ruins of the Abbey at Bishop's Waltham is an Apricot tree said to be over 200 years old. The tree is growing against a south-east wall about 9 feet high, and covers a space 40 feet long, and is at the present time carrying a good crop of fruit. The stem near the ground is nearly 18 inches in diameter, while many of the branches are 10 inches, and all of them very rugged in the bark. The tree is rather short of young wood, but on the whole looks healthy. It is presumed the roots are in close touch with a pond not far away. Altogether it is a remarkable specimen, and I am not yet able to determine what the variety is.—E. MOLYNEUX.

— COUNTY COUNCIL HORTICULTURE.—An interesting trial of several old and new sorts of Potatoes is this year being conducted at Bookham, Surrey, through the kind liberality of Mrs. Chrystie, a local resident, who having rented some land for the purpose of forming a garden school for boys of advanced age, also allotted a considerable space for a public Potato trial. This has been placed under the control of the Surrey County Council Technical Education Committee's horticultural instructors, and by them the seed Potatoes were purchased for Mrs. Chrystie and planted on the 13th inst. under the superintendence of Mr. Alexander Dean. Thirty of the best varieties in cultivation were selected from the lists of such popular growers as Messrs. Sutton and Sons, Reading; Jas. Carter & Co., High Holborn; R. Dean, Bedford; and C. Fidler, Reading. The moderate growers are in rows 30 inches apart and all the others 36 inches apart, so that ample space has been allowed. The land is situated in a very open breezy aspect, has hitherto carried field crops, especially corn; it was recently trenched 18 inches in depth, and has been dressed with moss litter manure from London, carefully forked in. Every sort has been labelled, and all are open for inspection by anyone interested in Potatoes. Apart from the interest which will presently attach to such a trial of Potatoes in the county it is hoped, should the disease be in evidence in the summer, to experiment with the now famous anti-fungus mixture, bouillie bordelaise, and thus submit in a public way its capacity to check the Potato disease.



— INSTRUCTION IN ORNITHOLOGY.—A daily contemporary observes:—A Government entomologist in one of the colonies suggests a scheme for the instruction of the farmer in ornithology and its relation to agriculture. He proposes farmers should be assisted to form collections of insectivorous birds, labelled with specimens of their nests and eggs, so that they might distinguish between the birds which do service to the agriculturist and those which do harm. The sooner such a system as this is introduced into this country the better; for farmers and those who have the care of orchards and gardens sadly need guidance in the use of the gun. Many friends of farmer and gardener are destroyed on mistaken suspicion.

— PRIMULA ROSEA.—Mr. W. H. Divers, Ketton Hall Gardens, Stamford, observes:—"Although this is undoubtedly hardy as far as the plant itself is concerned, the recent severe frosts have injured the flowers very much here, and they have presented a miserable appearance, quite different to what I anticipated. The abnormal amount of sunshine and dry weather we have had lately have possibly had a little connection with this failure, as none of the Primula family have succeeded so well this spring as usual. If we could only accommodate them with a cool house during the flowering season we might induce the trusses to develop to the utmost perfection."

— HORTICULTURAL CLUB.—The usual monthly dinner and conversation took place at their rooms, in the Hotel Windsor, on Tuesday evening, April 11th. The chair was occupied by Sir J. D. T. Llewellyn, Bart., the Chairman of the Club. There was a good attendance of members, including the Rev. W. Wilks, Rev. T. Handley, Messrs. Geo. Bunyard, E. Cockett, G. Paul, Harrison Weir, H. Selfe Leonard, and Dr. Soper. The discussion was upon "Hunting for Alpine Plants," and was opened with a very interesting paper by Mr. H. Selfe Leonard, in which, after describing the necessary outfit for anyone engaged in this pursuit, he gave a graphic description of his wanderings in the Dolomite region of the Southern Tyrol and in the Engadine, which he regarded as two of the richest fields of the Alpine flora in Europe, presenting, as they did, that of the granitic and calcareous formation. He showed how in the Dolomite region, especially where the two formations ran side by side, how completely distinct were the plants found on each. With regard to cultivation, he explained some of the difficulties attending it, owing not only to the various requirements of the plants, but also to the varying character of our winters, warm and sunny days being often succeeded by severe frosts and snow, while in the alpine districts the plants were covered with snow throughout the winter, which kept them warm and dry until the frost broke up in the spring. An interesting discussion took place, in which most of the members joined. A cordial vote of thanks was awarded to Mr. Leonard, on the proposition of the Chairman. The Secretary announced that a special dinner would take place on the 25th inst., to do honour to M. Henri Correvon, of Geneva.

— SPRAYING FRUIT TREES.—On Saturday, the 15th inst., the Stott Co. were invited to give an exhibition of their appliances for the prevention and destruction of insect and other pests by some members of the Evesham Fruit Growers' Association. The time fixed was 10 A.M., in the orchard of Joseph Martin, Esq., ex-Mayor of Evesham. Numerous fruit growers were present from Toddington, Evesham, and Pershore, including Messrs. Martin, Wise, Chichester, Field, Hooper, Brodie, Bullough, Gregory, Pollard, King, Clarke, and Gunnal. All the varied appliances and insecticides of the Company were experimented with. Mr. Stott, for the first time, brought out a 30-gallon engine. This engine is filled with a patent quadruple acting wing pump. Two patent insecticide distributors were fixed on the handles of the pump, and from each distributor a length of hose pipe being attached, and the new adjustable spray being used. The distributors being charged with killmright, various bushes and trees were sprayed with the solution given off. The result was everything that could be desired, caterpillars, aphids, and red spider being quickly destroyed. The working arrangements of the pump were fully explained, and it was shown that it is almost impossible to become choked with sand or other sediment. The patent syringe was next charged and used on black fly, the result instant death. This being an informal meeting of the fruit growers of the district, the results were so satisfactory that it was decided to invite the members to meet at 11.30 on Saturday next at Lord Sudeley's, Toddington. Mr. Stott expressed his thanks, and remarked he should only be too pleased to give a further demonstration.

— ALLOTMENTS IN ISLINGTON.—A short time since we announced that an effort was being made to ensure allotments for working men in Islington, and we now learn that "the West Islington Allotment Gardens Association" held a meeting recently at the Drovers' Hall, Metropolitan Cattle Market. The chair was taken by Mr. T. Lough, M.P. It was proposed that the Association should consist of the Trustees and other officers, the allottees, and such honorary members as might be elected by the Committee. The charge for allotments will be from 5s. to 10s. a year.

— VIOLA MANAGEMENT.—I grow a goodly number of Violas for summer bedding. Where many persons make a mistake in their culture is in selecting the wrong cuttings. Those springing direct from the base are the best; these taken off from 1 to 2 inches long the first week in October, dibbled thickly into boxes of sandy soil, and wintered in cold frames, root readily. The second week in March a temporary frame is made up with turf, and the plants put out in rather light sandy soil with a base of Mushroom-bed refuse 2 inches thick. The roots run freely into this, and the plants are removed to the open ground without receiving any check to free growth.—E. M.

— VINES AND VINE STOCKS.—Apart from the influence that one particular stock has over another variety in the growth and finish of the fruit, grafting affords opportunities for introducing other kinds into an established vinery. It is generally acknowledged that it is a bad plan to plant young canes in an old border. Even if such Vines succeeded, they need more time to carry an equal crop of fruit than canes that are the result of grafting. Striking instances have occurred showing the effect of grafting upon certain varieties. I remember seeing two Vines of Madresfield Court that were grafted on Black Hamburgh stocks; the berries in both cases cracked very badly, while another Vine of the same variety growing on its own roots in the same border was never known to have a split berry.—E. M.

— THE YOUNG GARDENERS OF FALKIRK.—I was very much interested with the remarks of "A. G." (page 292) concerning the young gardeners of Falkirk and district in petitioning their employers for a holiday on Saturday afternoon. It is most gratifying that some of the gentlemen conceded to their wish. All the men employed on this estate cease work at 1 P.M. on Saturdays. They have enjoyed this privilege for about two years now; it was the wish of my employer. I can assure "A. G.," or the head gardener mentioned, the arrangement works well, and I find I have quite as much work done now as I did when the men worked all day on Saturday. My young men do not leave me to do the work on Saturday afternoons; they each take their turn the same as on Sundays. I am very pleased to see the young men have proposed to form a gardeners' mutual improvement society.—FRED. J. THORNE, *Sunningdale Park*.

— GREEN VEGETABLES.—There can be no doubt but that the long spell of dry weather has seriously checked the development of autumn-planted Cabbages, and whilst many plants have been induced to bolt off to flower, others have remained almost stationary. We may expect to find all forms of green stuffs, and Cabbages especially, somewhat scarce and dear shortly. But the exceeding value of some of the coarser Kales has been well demonstrated recently, and those who had Dutch Curled, Cottagers', and Hundred-headed Kales, also tall Sprouting Broccoli, have derived great benefit from them. Whilst so many of the White Broccolis were killed by the hard weather early in the winter, Sprouting Broccoli has stood very well, and when gathered in a young state it is a very delicious vegetable. Turnip tops are now pretty well over, and even these have been far from plentiful. A late sowing, made specially to produce tops, proved to be of much greater use than did earlier ones that produced good bulbs, as these suffered severely in the winter. If it were generally the practice to raise a few hundreds of hard small Swede Turnips, store them during midwinter, and plant them up thickly early in March they would give a most valuable addition to our commonly scant green vegetables at this time of the year. The discovery that Round Flanders Spinach sown in the autumn is far hardier, and gives far better results in leafage, than the Prickly-seeded variety during the winter should help to make Spinach culture for the winter much more popular. Those who have of Cabbages either Ellam's Early, Matchless, or some other of the early small-headed varieties have much to be grateful for, as these precocious sorts are of the greatest value for this time of the year.—A. D.



— WINTER CHEER CARNATION.—This is without doubt a great acquisition. The habit of the plant is much more robust than Miss Jolliffe and the older varieties, and this is so noticeable that when Mr. Veitch first showed it to me in 1891 I ordered a good stock of it at once. I have been amply repaid by the way it has succeeded here and the great admiration it has called forth from all who have seen it. The flowers are large and of a brilliant scarlet colour, and are produced abundantly

#### AZALEA ANTHONY KOSTER.

WITHOUT doubt one of the most beautiful and striking exhibits at the meeting of the R.H.S. on April 11th was the grand Azalea shown under the above name by Messrs. Lane & Son, Berkhamstead, and which is represented by fig. 60. The trusses of bloom are enormous, and the individual flowers almost equal in size to the best Clivias, the colour



FIG. 60.—AZALEA ANTHONY KOSTER.

during the winter months with very little fire heat ; in fact it promises to be quite hardy, as two plants which I put out last autumn have passed through the winter quite safely without any protection, which shows its good constitution. These were dwarf, strong plants, and of course I do not imagine the older and taller specimens are so hardy ; but if judiciously managed it appears likely to be a useful addition to the border Carnations also, as we have very few good scarlets worth cultivating.—W. H. DIVERS, *Ketton Hall Gardens, Stamford.*

being clear yellow suffused with orange. Several small plants were arranged in a large basket, and all were completely smothered in flowers. The first-class certificate, which was awarded fitly, conveyed the general impression of this magnificent variety.

It is the result of a cross between *Azalea mollis* and *A. sinensis*, is perfectly hardy, was raised by Messrs. Koster of Boskoop, and sent out last autumn. It is one of the handsomest hardy Azaleas in cultivation, and should be in every collection.





## THE N.C.S. IMBROGLIO AND MEETING.

MR. RICHARD DEAN did not carry out his alleged intention to resign his position as Secretary of the National Chrysanthemum Society at the meeting held last week, but adopted the more prudent course of regretting the action he took in attempting to influence a "certain number" of members in the election of a Chairman of the Floral Committee. We are informed that he read a lengthy statement or "manifesto" with the object of showing how wrong it was for anyone to question his methods, and how rightly he had acted in the interests of the Society. Naturally the Secretary would take that ground, as if all the world were against him it would only show from his view the world's wrongheadedness. In his recent action, which led to the imbroglio, it may be conceded without any reservation that he was animated by the best of motives, but there appears to have only been seventeen persons in an assembly of fifty or sixty who could publicly sanction the course he pursued. It was a partisan course, or the appeal he issued would have been to all the members and not to a selected number only.

As a private member he may have the right to canvas for votes in a "private" manner, but in the case in question the canvas was official on the face of it, or would be so regarded, as official stationery was used. It was intended to influence the election in favour of a gentleman who was not a member of the Floral Committee, and there cannot be a doubt that it prejudiced another gentleman who was and is a member of that Committee. Mr. Dean's justification is that he did not know this member would be nominated, but then it follows that he did not know he would not. An error in judgment was committed, but not with an intention to offend any individual, still an error all the same; and such mistakes on the part of any secretary, paid or not, could have no other effect than creating dissension in the committee and among the members of any society. But mistakes made through want of thought, or under the impulse of good intentions, are essentially venial, and therefore not of a nature to impel to either resignation or expulsion. The rebuke of the meeting was quite sufficient, and the history of the case may not be without effect in cases of a similar character that may possibly occur elsewhere.

Mr. Dean appears to have a strong aversion to be referred to as the paid Secretary of the N.C.S., and though his remarks on the subject at the meeting did not refer to us, it may be said that when we so described him on a previous occasion we had not the slightest idea that the term was objectionable. We had in mind the fact that on the demise of Mr. Holmes it was decided that his successor should be paid for his services, the amount, we think, being £50 a year. We did not know until quite recently that when Mr. Dean was informed a salary was attached to his office he replied in effect, "Oh, please do not call it salary, but rather allow it for clerical assistance." He has a right to his preference, though at the same time it does not detract from the dignity of gentlemen equal in social status to a Secretary of the National Chrysanthemum Society to be paid for their services—to wit, Her Majesty's Ministers and the Secretaries of the Royal Horticultural and Royal Botanic Societies. Not one of these gentlemen could be respected more than they are now if their emoluments were differently described, except by snobs who are unworthy of notice. Mr. Dean, we presume, takes the money that is allowed and disburses it as he wishes, though he does a great deal of secretarial work himself, as he can do very ably. We did not intend to imply the slightest reproach by our reference, and we are perfectly ready to describe him as Honorary Secretary, if such he be, if that is more agreeable to him, though he will remain in the estimation of most men the same Richard Dean as before—impulsive, zealous, and autocratic, but well-meaning; a keen controversialist, who derives more pleasure from smiting with his keen pen than in having his own conduct impugned under any circumstances whatever; yet as a public man he is entitled to the honour of public criticism.

We hear nothing but praise of the conduct of Mr. Gordon at the meeting. His attitude is described as most befitting to the occasion, and his speech admirable in matter and tone. He would most willingly have supported Mr. Shea as Chairman of the Floral Committee of the N.C.S. under ordinary circumstances, and Mr. Shea would as willingly see Mr. Gordon in that position; but both gentlemen decline the honour now, as might be expected, as did others, Mr. Fowler consenting to occupy the position, and we are pleased to note he was elected with unanimity. We are glad also to note that he brushed aside a proposition for another meeting of a conduct-inquiring order. It was surely not necessary and could lead to nothing substantial. Sober work on sound clear business lines will be better for the Society than contentious "meetings."

The one of which a report is given below will, we hope and believe, strengthen the Society. It gave the death blow to autocracy, and established a strong "opposition"—strong not only in numbers but in administrative ability, and as the members composing it are not less earnest in their desire for the prosperity of the N.C.S. than the active officials are we may expect that mistakes will be reduced to a minimum, and that prudence will be the governing factor in the conduct of affairs.

The Society has attained a splendid position in the floral world, and we regret the disturbing influences that arose within it through admitted indiscretions, intensified, we fear, rather than diminished by the dalliance that was allowed to prevail in connection with them. A national society that is afraid of "exposures" cannot for many years remain worthy of its name. Publicity has done much to raise the N.C.S. to its present position, and we suspect there is small fear of a repetition of the errors of the past; had they been permitted to continue, hidden and unchecked, they would have eaten like a canker worm into the very vitals of the Society; it is worthy of a better fate, and the bright future we hope to see.

A meeting of the General Committee of this Society was held at Anderton's Hotel on Wednesday, the 13th inst., when Mr. E. C. Jukes presided.

The first item of importance in the evening procedure was a communication from Mr. C. E. Shea, in which he referred to the circumstances attendant upon his recent election to the chairmanship of the Floral Committee. He felt quite sure the Secretary, in acting as he did by making a canvas, thought he was doing what was best in the interest of the Society; but Mr. Shea felt it was an error of judgment, and could not therefore accept either the position of member of that Committee or the chairmanship. Considering the services Mr. Gordon had rendered he would suggest that that gentleman should be elected.

Mr. R. Dean then said that early in the year Mr. Ballantine had intimated that business would prevent him attending as frequently as before, and he thought the time had now arrived when a Chairman of the Floral Committee should be appointed as distinct from the Chairman of the General Committee. Mr. Shea was approached with the view of seeing whether he would accept the post, as he was a man unpugged in any way, and quite unconnected with the trade. He was also a desirable man in many other ways, and Mr. Dean was quite unaware that anybody else was likely to be proposed for the post. Under those circumstances he did issue a request marked private to a certain number of the members, first, that they should vote for him as a member of the Committee, and, secondly, as Chairman. Up to the moment Mr. Gordon was nominated he had no suspicion that such was to be the case, and it was only a few minutes previous to the meeting that he heard that Mr. Payne was likely to be proposed; but the latter gentleman expressed his willingness at once to retire in favour of Mr. Shea, whom he considered far better as an independent member and an amateur to occupy the chairmanship. Mr. Dean could not see he had done anything he could regret. He protested against being regarded as a paid Secretary, and regretted such an expression should have been used in the columns of a contemporary, and that in spite of all his efforts no withdrawal had been made.

Mr. Gordon considered the question whether the Secretary was a paid official or not of no great importance, but as a matter of fact he was so advised and quite believed he was. He did not intend to allude to the election of the Floral Committee and Chairman because he was defeated. There was no one he would like to see occupy the position more than Mr. Shea, and at the last meeting he was perfectly satisfied with the result until the meeting was over and he learnt a circular had been sent round to influence the voting. It was a question that affected every member of the Society. If any official used his position to influence members in the matter of election the meetings were simply a farce, and could have but one result—viz., to discredit the proceedings of the Society. He thought the Committee was bound to express an opinion whether such a proceeding was right and proper in the management of the Society. He was not a man to make disturbances or create a want of harmony, and did not want it to be regarded as a personal matter; but he had a duty to perform to the members who had voted for him. He objected to proceedings that brought his name and that of his friend Mr. Shea into publicity in the papers in such a way. It was for the Committee to decide whether they would support such proceedings. At present it appeared the Chairman and Secretary were alone responsible, but immediately the Committee expressed their approval they assumed the responsibility. It was not for any officer to influence elections—(loud cheers)—and all that was wanted was for the proceedings to be carried out in a straightforward manner. He would move "that the Committee desire to place on record its disapproval of the action of the Secretary in writing to several of its members with the view to influencing their votes in favour of one of the candidates on the occasion of the election of the Floral Committee on March 6th."

Mr. Rundle thought the whole of the Committee should deprecate the action. It was an endeavour to influence the Committee. He had not received a circular. He thought the Committee should consider the advisability of having a paid Secretary, and thus stop all squabbling. He thought the action would cause a loss of confidence, both by the general public and exhibitors at the Floral Committee.

Mr. Bevan presumed the Secretary acted in his private capacity—any other member might have done so. Other names might have been proposed but for the circular. He thought they ought not to go outside the Committee for a Chairman.

Mr. Witty could not do otherwise than support the motion, and was very sorry Mr. Dean took such an injudicious step. Would it not have been better to leave the election in the hands of the Floral Committee themselves?

Mr. Addison criticised very fully the Secretary's statement, and supported Mr. Gordon's motion. He considered the Secretary a paid officer, no matter in what light the payment for clerical assistance was



looked at. When Mr. Holmes died the members would remember the Committee came to the resolution to pay for the secretarial services, and the word salary was used. Mr. Dean objected at that time to that word being used, and asked that it might be called clerical assistance. Mr. Addison continuing said unless Mr. Shea was elected a member of the Floral Committee first he could not be elected the Chairman. The Secretary knew this, hence the circular.

Mr. W. H. Fowler felt sorry to have to speak on the subject, for Mr. Dean had committed an error of judgment, and he must support the motion. He thought he was not a paid official. Many honorary secretaries were allowed clerical assistance, and properly so. It was very unfortunate, for the gentleman elected was a most excellent choice, and the Society would have been fortunate in having him. He must vote for the resolution, because what had been done was not calculated to inspire confidence.

Several members admitted receiving the circulars, but had not been influenced by them.

Mr. Burrige wanted to pour oil on troubled waters. He thought if Mr. Dean admitted the error the motion might be withdrawn. The Chairman felt so too. He was sure Mr. Dean acted from the best of motives. If Mr. Dean would admit the error he thought the matter might be settled. He had worked most nobly in the past, and had served the interests of the Society, doing an immense amount of work, such as a paid Secretary could not be expected to do for very much more than was allowed Mr. Dean. If they drove Mr. Dean to resignation, and they must consider the effect of the motion if carried, it would be a more serious matter than some of them would think. He protested most emphatically against him being considered a paid Secretary. The future he thought hung in the balance. If matters could be smoothed over, and they did not pass a vote of censure it would be best.

Mr. Gordon replied, and would have been pleased to withdraw the motion if he felt he could do so in justice to the Society. He thought it was a time when the Committee should express its opinion. He was prepared to abide by the decision of the Committee, but to withdraw it would be wanting in his duty.

The motion was then put, there being fourteen in favour and seven-teen against. There must have been nearly as many members who abstained from voting.

Mr. Dean then rose, and said he had no hesitation in saying that he regretted the action. He fully believed he was doing the best for the Society, and if that admission would tend to allay matters he would be only too pleased. He hoped Mr. Gordon would allow himself to be nominated for the post, but that gentleman thought it would not be consulting the best interests of the Society if he did. Several other names were proposed, but they declined. Mr. W. H. Fowler, however, was elected without contest.

Two vacancies having occurred on the General Committee, Mr. Hy. Cannell and Mr. E. Molyneux were elected.

Mr. Jukes protested against being charged with discreditable proceedings, as was lately the case. Everything he had done had been for the best, and he was not ashamed of anything he had done. He might have made mistakes, as who had not, but he distinctly denied being associated in any way with discreditable proceedings.

Mr. R. Ballantine, who came in at a late hour, concurred in Mr. Jukes' remarks. He would be glad to meet the members and lay his conduct in their hands.

Mr. Fowler thought that the calling of any meeting for such a purpose was unnecessary. Anyone who had a grievance against the officials could have attended the annual meeting. As they did not, he could only assume that the majority were perfectly content.

The Chairman said, in reply, that if the members thought the officers had acted unworthily he was quite prepared to place his resignation in their hands. He thought no member ought to take such a mode of expressing his views as Mr. Trinder had done recently.

#### JUDGING CUT BLOOMS.

"SADOC" asks me at page 298 if I have ever awarded *Refulgens* the premier prize when Lord Alcester is competing in prime condition. If he will refer to my last (page 278) he will see clearly what I say about *Refulgens* is not in connection with awarding premier bloom prizes. It reads thus: "But an exhibitor who tastefully arranges his colours and also includes difficult varieties like *Refulgens*, giving his stand a more pleasing and fresh appearance, should have a point for this over one that stages too many all of one colour." This has nothing to do with the question he puts to me, but I will answer it. I have not, and I fancy no one else has either, if Lord Alcester or some other of the Queen family were competing in good condition. But where *Refulgens* tells is in a stand of twenty-four distinct varieties when in first class condition. Most exhibitors would be pleased to be able to include it in a twenty-four stand, for we have not yet even twenty-four varieties of the size and quality of Lord Alcester, and the other a colour we are short of among incurves, having too many light shades.

"Sadoc" will find plenty of judges who, before they will award a premier prize to a bloom, will first lift it out and compare it with some others who may be half a point behind; but I would not like to condemn such men as not competent to award prizes. Can he say he has not adopted the practice himself? If all judges are not just of "Sadoc's" opinion of what he considers the proper way to judge cut blooms, he should not condemn them, or he alone might be left to do all the work. I have seen the most experienced judges at several of our large shows prefer to remove the stands and judge them side by side instead of

measuring the comparison a long distance away, and often in an indifferent light, where it is difficult at times to see the slight shades of colour in the different varieties.—J. LAMBERT, *Powis Castle Gardens*.

#### OBJECTIONABLE VARIETIES.

It has been a mystery to me why exhibitors waste valuable time in cultivating some *Chrysanthemums* which I regard as useless, now there are such a number of superior varieties available. I am not now alluding to collections where the largest classes are filled by competitors, but I specially refer to those cultivators who cannot from their convenience ever hope to compete in classes where no less than at least thirty-six varieties of Japanese kinds are required. Such exhibitors confine themselves to classes of, say, twelve or eighteen kinds, but who at the same time include so many that I regard as being worthless, or nearly so, as exhibition flowers. Even the largest exhibitors have no occasion to rely on some of the sorts met with now that the influx of superior varieties is so large. In competition these inferior kinds lose points, even if the blooms are large and well developed, as compared with those more beautiful and less easy to cultivate.

I do not think growers as a rule pay sufficient attention to those varieties that are acknowledged to be difficult to present in the best possible form. It seems natural that these should be discarded when so many others much easier to grow are obtainable. Take, for instance, *Boule d'Or*, *Etoile de Lyon*, or *Mrs. Alpheus Hardy*. Neither of these can be regarded as being of easy production. True the second named is numerously staged, but not always in good condition. If varieties like the one in question were more often shown as it ought to be we should not hear nearly so much complaining about the large unsatisfactory blooms monopolising the attention of cultivators at the expense of those more beautiful and less cultivated. In competition it would undoubtedly "pay" the exhibitor to conquer the peculiarities in culture of some sorts so as to present these in faultless condition as compared with the poor examples so often met with at shows. Now that English cultivators have taken to hybridising the flowers and saving their own seed, there is really no reason why those that have nothing to recommend them after a whole season's labour has been spent upon them.

Much of the retention of varieties that are useless is owing to prejudice against innovations that needs overcoming. Varieties like *Mrs. Irving Clarke*, *Album striatum*, *Ada Spaulding*, *Baltimoreau*, *Baron de Prailly*, *Bronze Dragon*, *Dormillon*, *Comtesse de Beauregard*, *M. Burnet*, *Fair Maid of Guernsey*, *Meg Merrilies*, *Ralph Brocklebank*, *James Salter*, *Frederic Marrouch*, *M. J. M. Pigmy*, *Maggie Mitchell*, *W. G. Drover*, *Lady Lawrence*, *Madame C. Audiguier*, *M. Tarin*, *Bertier Rendatler*, *Mr. H. Cannell*, *Mrs. E. W. Clarke*, *Peter the Great*, *Soleil Levant*, *Stanstead Surprise*, *Mdlle. Paul Dutour*, and *Elaine* amongst Japanese; and *Lady Talfourd*, *Golden Beverley*, *Beverley*, *Lady Slade*, *White Globe*, *Fingal*, *Pink Perfection*, *Guernsey Nugget*, *Faust*, *Prince of Wales*, *Lord Derby*, *Mrs. Haliburton*, *Robert Cannell*, *Incognito*, *Sir Stafford Carey*, *Venus*, and *White Venus* in the incurved section are often met with at shows, and judges express surprise at these older sorts remaining so long to take the place of more worthy additions to the various sections.

Perhaps cultivators will think over the matter a little, and see if they are not wasting valuable time in cultivating what I consider little better than worthless now the opportunity for revising the lists is so easily available.—SADOC.

#### CLAREMONT, TAUNTON.

CLAREMONT, the residence of W. H. Fowler, Esq., J.P., Mayor of Taunton, and the recently elected Chairman of the Floral Committee of the National *Chrysanthemum* Society, is situated a little more than a mile from Taunton to the south-west thereof, on high ground and in one of the pleasantest of the beautiful suburbs of the town. Five years since, as I was told by its owner, the place was wild and bare, a fact scarcely realisable until one thinks of the possibilities implied in a liberal outlay, combined with energy, taste, and a splendid climate. Gardeners who have lived only in the north could scarcely imagine it possible for Conifers and shrubs to grow as rapidly and freely as they do here.

But it is not the ornamental trees and shrubs, however fine, that Mr. Fowler is so proud to show his visitors. No! turning abruptly to me as we enter the garden, he remarks, "We have some *Chrysanthemums* to show you," and such I soon found to be the case. Calling his gardener, he led us to a range of span-roof frames, and lifting up the first light of these, disclosed to view the finest plants I have seen this season. All were in 6-inch pots and possessed remarkably large thick foliage and stout stems, but very dwarf and short-jointed. *Mrs. Alpheus Hardy* is represented by some half dozen plants, as strong and robust as the others. Mr. Fowler says he finds no difficulty in flowering it freely and well; his plants have just been topped or pinched, and he will take the first flowers produced from the resultant breaks, two to each plant. In the compost for this variety he uses peat and sand, potting less firmly than for other varieties, and finds that so treated it makes roots freely and grows with vigour.

The summer quarters of his plants are novel and instructive. A level plateau, on the highest part of the garden, is laid down with grass, and at intervals of about 6 feet apart are the lines for his plants; along these lines, fitting closely end to end, are trays each about 6 feet long, 1 foot broad, and 3 inches deep, formed of zinc or



sheet iron, and well painted. These are kept constantly filled with water, and in them are placed what look like short stout drain pipes about 6 inches deep and the same in diameter; upon these stand the pots containing the Chrysanthemums surrounded entirely by water. Thus neither worms, slugs, nor earwigs can ever reach the plants; and in addition Mr. Fowler believes the plants derive much benefit from the vapourised moisture constantly rising amongst their foliage. Stout stakes and wires strained between them in the usual form are adopted for supporting the plants, and earwigs are prevented climbing these stakes by bands of cotton wool put tightly around them, at about one foot from the ground, and these kept saturated with petroleum.

Chrysanthemums are not, however, the only flowers the culture of which is here made a speciality. Tea Roses, Gladioli, double Tuberous Begonias, and Freesias all have a like distinction accorded them. The Chrysanthemum house is now devoted to Tea Roses in pots; fine healthy plants free from mildew and insect pests and carrying many splendid blooms, amongst which we specially noticed Sappho (Paul) a recently introduced variety resembling as here seen a good Catherine Mermet. Outdoors an immense number of Tea Roses are grown in beds, as standards upon Briar stocks, and are looking wonderfully well. I asked Mr. Fowler if his losses amongst these, grown in this manner, were not often severe in winter, but he assured me such was not the case. Unfortunately the climate of Taunton is not to be found generally throughout England.

More than 1000 corms of Gladioli, all the best varieties, are grown in beds of four rows each, with about fifty in each row, and many are the prizes Mr. Fowler has secured for these and his Roses. Double Begonias have a house specially devoted to them, and very vigorous and strong they are looking. They are now in 9-inch pots and look as though they will make specimens 2 to 3 feet through. A large number of single varieties are bedded out in summer, and these are now making sturdy vigorous growths planted out in cold frames, so that being freely ventilated and well hardened, they may be lifted and transplanted when required without check or injury.

Freesias are extensively and well grown, these also being Mr. Fowler's favourite flowers. They are all grown in large square seed pans occupying shelves near the glass in a cool house, and the number of long spikes now furnished with plump seed pods testifies to the freedom with which they have flowered. Mr. Fowler thinks his practice of leaving them upon these shelves exposed to the fullest sun well into the summer, so that the young bulbs become thoroughly ripened, contributes much to his success with them. When taken down therefrom each season the pans are emptied and refilled, using fresh compost and assorting the bulbs into their respective sizes. They increase very rapidly, and he has many to give away to friends each season.

Another feature of Claremont is the immense numbers of Narcissi, all the best varieties intermixed and planted in grassy banks adjoining to the lawn. These have a most charmingly natural and free appearance growing amongst the uncut grass, which forms a splendid setting for them, and constitutes a scene at once novel and pleasing to every beholder. On a farm near, during the past autumn, five thousand bulbs were planted amongst the meadow grass for naturalisation. Mr. Fowler is a most enthusiastic floriculturist, and his ideas and wishes are most loyally supported and ably carried out by his gardener, between himself and whom a perfect accord and sympathy appear to exist, as it should always be between employer and employé.—W. K. WOODCOCK.

### HAZEL-BUD GALL MITE.

THIS insect threatens to prove as destructive to Cob nut and Filbert trees as the Black Currant-bud gall mite (*Phytoptus ribis*, Westw.) has to Black Currant bushes in many parts of England, especially in the North, also in Scotland, for some years past.

The Hazel-bud gall mite (*Phytoptus coryli*, Frauenf.; *Calycophthora avellanæ*, Amerl.) was first observed by Dujardin (Ann. des Soc. Nat., 1851). It was also noticed by Dr. Amerling of Prague and Dr. Kirchner of Taplitz, two Hungarian naturalists, about that time; and Kaltenbach states, in 1863: "This mite, according to the observations of Dr. Amerling, M. Kirchner, and ourselves, deforms the leaf buds into cone-shaped, scaly galls, which fade early, and never unfold or produce fruit." The term "cone-shaped, scaly galls" only applies to the configuration of the infested buds in the axils of the leaves in late summer, they being in August considerably enlarged, and by September present the corticated, scaly, corrugated appearance of catkins just emerging from the buds at the bases of the leaves. In that month, and sometimes in August, the affected buds are round and flattened at the apex, considerably swollen—quite as large as a full-grown Marrow Pea, and of similar shape, with a brown, scaly exterior. The mite-infested buds differ from normal wood or fruit buds in this essential particular—namely, they are not only then (September) four times the size of a fruit bud, but the scales of the buds are open and hypertrophied, with a ball-like swelling in the centre, while, in the case of a wood bud being infested, there is no catkins being pushed from its side. The fruit buds of Hazel, Cob nut, and Filbert trees are rounded and never push catkins from their sides, for, if cut open and examined in September with a good lens, the growth of the following season will be clearly seen—the embryonic shoot and leaves terminated by its cluster of nuts. Such a bud is always solitary in the axil of its respective leaf; a wood bud may also be without a catkin-producing bud by its side, but it is from the side of a wood bud that catkins appear in due course. The catkins, therefore, owe their presence

to the preservation of the wood bud, for if anything happens to the wood bud or it does not receive sufficient support, catkins are not formed and pushed from that joint. A fruit bud infested with mites cannot produce fruit, nor a wood bud similarly attacked bear catkins by its side, for the simple reason that the forces of the wood bud are expended in the production of the gall, their presence or otherwise depending on the preservation of the wood bud and the amount of support it receives. It is essential, therefore, that the buds first formed in the axils of the leaves remain normal for the ultimate formation of male or female blossoms in embryo, those depending on the trees receiving the needful support and its due assimilation, for if either of these are defective wood buds only will be formed, plethora on the one hand, and poverty on the other hand, being alike fatal to fruit production. Why one bud should have formed within it the male and another the female structures is not known, but it is well to understand that gall mites attacking either form of bud will prevent their unfolding and producing either growth or fruit.

If the buds of Hazel, Cob nut, or Filbert trees infested with mites are examined in spring they will be found of the appearance shown in the illustration, fig. 61, A, a spray of Hazel, natural size. Three buds, *a*, are infested, swollen, distorted and destroyed so far as growth of value to the tree is concerned by the Hazel-bud gall mite. They, as will be seen, are rounded and hypertrophied, without any outgrowths, and are crimson coloured, indicated by the "black" in the engraving. In the centre, this part now (April 7th) becoming fissured, and by degrees the galls crack, open, turn black and wither. Let us look inside one of these swollen buds—gall formations. If torn open there is nothing visible to the naked eye beyond a distorted swollen mass. A pocket lens discovers nothing, only shows more of the devastatory work with, perhaps, a dirty white grub. But these supposed devourers of mites are very seldom found in bud galls, and the parasitic entedon is certainly not found in the galls until they have been deserted of the mites. Phytophagous chalcidæ, also, may be dismissed as non-parasitic on mites.

The way to examine a bud-gall with a microscope, and see the hundreds of minute, semi-transparent, ashy-grey coloured mites is to cut the thinnest possible sectional slice of the interior of the gall and place it on a glass slide, with a reflector throwing light upon it from beneath. Such section is shown in B. Several active creatures, less than 200th of a line in breadth, promenade the excrescences and stump-like hairs, and eggs, affixed by their small ends mainly, interest the beholder. Some of the insects appear browsing on the tips of the stumps (*b*), others pass from one stump to another (*c*); not a few steady themselves by their caudal appendages, and clasp the stump ends with their maxillæ (*d*), while others "sun" themselves on the eminences (*e*). The galleries are very irregular and partitioned, sometimes, but not always, protected by hairs resembling the outgrowth of fungi, and called erineum. The eggs (*f*) vary as much in size as those of fowls, and they are, as seen and sketched on April 7th, equal in diameter to the average transverse one of the mites.

The specimen, C, greatly magnified, was specially selected for illustration; also the egg, D, the nucleus or head being clearly visible at *g*. As this part of the egg gains in weight it leans to one side, and the sac becomes drawn out, as shown in E. The mite ultimately emerges with four feet and the bristle-like attachments at the sides and caudal part of the body, leaving the empty sac still attached to the wall of the excrescence, as in F. When the newly hatched mites get well on their legs, and appear as *c*, they desert the galls, not a single one nor any trace of its former occupants being found in the discoloured, shrivelled gall but the empty sacs, with perhaps the larvæ or maggots of some fly.

What happens to cause the exodus of the mites is clearly due to their being no longer able to produce further swellings of the gall, because the sap which flowed into it in spring or from their entrance into the bud has been transferred into other channels, the tree not centring its forces on abortions, but on the growths essential to its enlargement and the reproduction of its kind—that is, the wood and buds of the current year. It should be distinctly understood that the mites must have live parts to act upon, otherwise they cannot produce galls, which are due to drops of poison deposited by the mites on the host, producing chemical changes, and hypertrophies yielding their essential food. This cannot go on the same part indefinitely, for what tends to produce a swelling does so at the expense of another part of the host, so that there is no hypertrophy without its corresponding atrophy, and culminating in the parasites exhausting the supplies of food, therefore, perforce of necessity, they seek fresh pastures.

What becomes of the mites from their departure out of the old galls to their presence in the new buds of the Hazel, Cob nut, or Filbert trees in autumn? Dujardin states that he found the same species of *Phytoptus* he detected in the Lime leaf nail galls in the malformed and distorted buds of the Hazel. M. Dujardin's figure of the Lime-leaf nail-gall mite (*Phytoptus tillæ*, or *Ceratoneum extensum*, Bremi), in the Bethnal Green branch of the South Kensington Museum, Aptera, case x., No. 16, is a very different one to that in the engraving C; in fact, they are different species. M. Dujardin's mistake is easily accounted for by his being an early worker, though preceded by M. Duger (1832-1834) and M. Turpin, who observed, in the nail-galls of the Lime leaf, a number of very minute semi-transparent fleshy mites of a new and hitherto unknown form—"a narrow creature with two pairs of small legs at its head, and some kind of sucker apparatus at its tail, on which it rests and raises itself, swaying about its body." This accurate description of a gall mite cannot be improved upon; but M. Turpin regarded "the creature" as a species of *Sarcoptes*, yet his figure accords with Dujardin's of



*Phytoptus tillæ*, and Reaumur is believed to have seen the makers of the galls a hundred years before anybody else.

Now there are only five species of bud gall mites. *Phytoptus betuli*, living in Birch buds; *P. coryli*, infesting Hazel buds; *P. persicæ*, attacking Peach buds; *P. ribis*, living in Black Currant buds; and *P. taxi*, infesting Yew buds. None of these has been proved to live in leaf galls, or in erineum hairs on the leaves. There certainly is a resemblance to each other in all mites, otherwise they could not be formed into one genus, but there is also a difference, hence their division into species, and the view of mites transferring their attacks—living in summer in leaf galls or erineum and in winter in bud galls—is mere conjecture.

The Hazel bud gall mite would be most likely, assuming the mites to have different hosts at different seasons, to exist on the Thorn or Maple in summer; but the Thorn *Phytopti* is a transparent whitish creature, and appears in May, forms erineum rust on the turned-up edges of the

Apple tree, *Phytoptus pyri* and *P. mali*. These are transparent white, accord well with Scheuten's sketch (copy) at the Bethnal Green branch of the South Kensington Museum, Apera, case xvii., No. 4, and they never attack the buds of the Pear or Apple, and only leave the trees when forced to emigrate through scarcity of food. They, however, do something quite as bad, or worse—produce a knotted, warted, cankerous condition of the twigs, which becomes scaly in the limbs, weakens, and sometimes kills the trees, as I observed in three orchards lately. Mr. Harrison Weir and Mr. J. Hiam are in this respect quite right as regards this form of canker, and once a tree, Apple or Pear, is attacked by these mites it continues so year after year, adjoining but detached trees remaining free for some time, or until the infested trees become impoverished or dies, then emigration sets in in earnest, and the disease-resisting trees, so called, become a prey to the mites. The leaf gall mites, however, are in some cases great rovers, *P. oxyacantha*, Am, being, perhaps, the most remarkable; but the bud gall mites carry



FIG. 61.—HAZEL-BUD GALL MITE; INFESTED AND CLEAN GROWTHS.

SUMMARY OF REFERENCES TO THE ILLUSTRATION:—A, Hazel twig, natural size; a, buds infested with Hazel-bud gall mite, *Phytoptus coryli*; j, unattacked terminal bud; k, basal bud; m, catkin-bud destroyed; n, wood bud by the side of catkin-bud; o, point of cutting off infested growth for burning. B, very small sectional part of bud gall, greatly magnified; b, mite browsing on stumpy hair; c, mite passing from one stump to another; d, mites holding by their caudal appendages and clasping the stump ends with the maxillæ (lips); e, mite at rest; f, eggs of mite. C, specimen mite, greatly magnified. D, egg of mite, highly magnified; g, nucleus or head. E, sac drawn out by mite before emerging, highly magnified. F, empty sac, greatly magnified. G, twig of Hazel infested with gall mites; k, terminal bud attacked, also the next below; l, unattacked wood bud; i, basal buds. H, clean growth of Hazel twig, natural size; p, terminal growth, with nut cluster in centre. All the figures are from life (April 7th, 1893) except E and F, which are from 1892 drawings, to the same enlargements as B, C, and D.

leaves of a greenish yellow colour; they also form light brown egg-shaped bells and club-like galls. When autumn arrives these *Phytopti* have blackened and destroyed the points of the young shoots. They are not bud gall makers. *Phytopti* produce beautiful galls on Maple leaves. They do not enter the buds in autumn and make galls of them for their winter sustenance.

On the other hand, there is not any erineum on Hazel leaves in summer, and the nearest resembling mites are those of the Pear and

off the palm for emigration and devastation, the Hazel bud mite being widely distributed.

This mite does not leave the attacked buds before the Hazel is well in leaf, and the young buds forming in the axils of the leaves. The young growths, shoots, and leaves are hairy; the mites, as shown by the late Professor Claparède, possess hair-claspers, which he, as well as the late Mr. C. Darwin argued, "must have been independently developed, as they could not have been inherited from a



common progenitor, and in the several groups [of the parasitic mites] they are formed by the modification of the fore legs, of the hind legs, of the maxillæ or lips, and of the appendages on the under side of the hind part of the body."—"Origin of Species," page 143). Now, without these hair-claspers the mites would make little progress over a hairy surface, as that of a shoot, intervening between its old domicile and a newly formed bud, which it has to form into a new habitation for itself. When this migration from an old withered gall takes place varies, sometimes in May, often much later, always by the time the buds are formed, for it must take advantage of their swelling or formation, otherwise it cannot produce a gall, and the hair-claspers facilitate its progress from one part of the tree to another, or from one bush to its neighbour. Whether the mite can and does derive nourishment from the tree hairs is not known, but it cannot live long outside the gall, and it is pitiful to see the frantic endeavours of the mite to find something to clasp by rearing itself erect and moving its legs and maxillæ, and it soon dies. It may be different on a young growth—I have not found one—and it is questionable if the mites do more than pass from an old gall to a new bud. That certainly occurs by midsummer, and the growth of the bud attacked is then abnormal, by August as large as a field Pea, and a gall as large as a Marrow Pea is formed by September.

The mite always attacks the wood and catkin, or fruit buds, passing over the small wood buds at the base of the shoots, A *h*, and G *i*. Sometimes the extremity bud, A *j*, is not attacked; in other shoots the terminal bud, G *k*, is infested, whilst a wood bud, G *l*, has been passed. Mites evidently can make a mistake by destroying the bud, A *m*, a catkin bud, of no value for making a gall, while the wood bud, A *n*, remains intact. This is no doubt a consequence of the mite or mites having dropped a drop or drops of poison into the centre of the wrong bud and killed it, for, as before stated, no catkin bud ever is made to produce a gall, but the wood bud may before that and the catkin bud become distinct parts, and this is determined by midsummer, if not sooner, and it goes to prove that the mites pass direct from their old habitations and commence at once to form new out of the young buds then receiving the assimilated matter abundantly by the leaves. The galls are considered to be due to irritation—a mere guess—for no irritation will produce a chemical change in the juices of the plant, and that certainly takes place, the green colouring matter (chlorophyll) being abstracted, and red first, then brown, and lastly black is the colour of the excrescences or galls. Poison, a minute drop or drops, is unquestionably the exciting cause of the galls, and the progressive growth of the excrescences may be due to the same cause, for until the growth ceases there is no exuvie in the gall, afterwards abundance, and the mites soon clear out of such a fouled nest—old and young emigrating together.

A clean growth, H, is easily detected in spring from infested A and G. The remedy is to cut off and burn the affected growths, say at the bars, O, not later than the vernal equinox or the decay of the catkins, by which time the flowers will have been fertilised, not deferring it later than the time the healthy shoots are pushing growth with the clusters of nuts, H *p*. The mites and eggs are then in the galled buds, and the remedy is sure.—G. ABBEY.

### SOUVENIR DE LA MALMAISON CARNATIONS.

IN the course of remarks on these Carnations a writer on page 284 makes statements to which I would like to refer. First, as regards Madame Arthur Warocqué, which I recommended shortly after the introduction of this variety from Brussels. It is a good Carnation, but it has no right to be classed as a Malmaison, and it is time that it should cease to be termed one. If I recollect rightly, plants in flower were presented to the Floral Committee of the Royal Horticultural Society, but were passed, while some time after the thirty-year-old pink Malmaison was honoured with a certificate.

The second point I wish to refer to is that cool treatment suits the Malmaisons best. Cool treatment has one serious drawback, inasmuch as the period of flowering has to be left to the time natural to the plant. In these days this is a matter to which most gardeners cannot confine themselves. The present year all my plants are autumn layered, yet I am now able to cut flowers from the central spike. Under cool treatment I should have been obliged to wait for another year until I could obtain flowers from the side growths; but the latter in my case will follow close on the central growth, and yield flowers throughout summer and autumn. Under such circumstances, I should be unwise not to keep the plants in a growing temperature, which I am inclined to believe is not inimical to the health of the plants, and which gives conditions by which the best blooms are produced.

With regard to which variety is the best, my opinion is that the old blush Malmaison, when produced in good form, is superior to the others. Then the deep pink, or Rothschild variety, as so many now term it; next Lady Middleton; and then one which I saw exhibited in London as a pink form, but which I consider unworthy of cultivation.—B.

### A TRIP TO RENFREWSHIRE.

ON the 25th ult. I paid a visit to the residence of the late "Renfrewshire Bee-keeper" for the first time since his death. The thermometer stood as high as 68°, and a short distance from the mansion lay a large wreath of snow. I scanned many old favourites, amongst which were Plum trees sadly scourged by the blue tits. Although everything was there as usual that pleased the eye, the absence of our true friend made

sadness that not even the lovely flowers could dispel. Hepaticas in various shades were charming, Croci in millions made a feast indeed to the eyes of those who can appreciate, while the Scillas in variety, from the pure white to the pink and blues of different shades, added richness to the scene. The huge clumps of Leucojums, large in flower and foliage, with their sweet fragrance, showed well amongst the shrubbery, and how well adapted they along with the Scillas are for woodland decoration. Daffodils and Snowdrops were very attractive, and are in this quarter widely distributed, the latter being mostly of the double varieties.

I observed one single Snowdrop, having flowers not unlike Elwesi, but the foliage was from 1 foot to 15 inches long, by 1 inch broad. Can Mr. Arnott name it? Those that interested me most were some of the Crimean form I sent him some fifteen years ago. Each flower, including the seed pod, measured 1½ inch long, being three-eighths of an inch larger than they grow with me. When I saw them it recalled to my mind the large one mentioned by Mr. Arnott as being found at Galston, and suggested that soil and situation may account for all the extra size.

The great contrast in size of these flowers when compared with my own gave me hopes of some of my own hybrid seedlings. They are larger than the Crimean, or any other variety I have, with the additional property they do not reflex their petals to the same extent as most other varieties, remaining intact, more bell-shaped, while the inner tubes remain impact, the petals never separating while the flower lasts.—W. T., Blantyre.

### SHOW OF CAMELLIAS AT WALTON LEA, WARRINGTON.

ON Sunday and Monday, April 9th and 10th, the grounds surrounding this beautiful residence were, through the kindness of John Crosfield, Esq., thrown open to the public that they might spend a pleasant afternoon and view the Camellias which are now in full bloom. Brilliant sunshine prevailed on both days, and thousands of persons, young and old, made their way to Walton, either on foot or by means of conveyances, which ran to the entrance of the gardens. The number of visitors on Sunday was estimated to be about seven or eight thousand, and on Monday over two thousand, and not the slightest damage was done. What a treat to those hard toilers must this feast of Camellias have been! And if to them it is equally so to the practical gardener, who hears in these days the cry that Camellias are out of date.

I will in as few words as possible try and describe the house in which Mr. Kipps, the gardener, grows the plants so well. Originally it was a three-quarter span 50 feet in length, but this becoming so crowded the house was enlarged to 100 feet in length, 15 feet 6 inches in width, and about the same in height, the back wall being about 10 feet, and facing east. A path runs down the centre of the house with a border along each side. Here are planted the Camellias, and I would like your readers to picture in the border next the back wall a row of perfect pyramids some 14 or 15 feet high, clothed from bottom to top with the most luxuriant foliage, every shoot carrying perfect flowers, and the row next the front of the house about 10 feet high, all superbly flowered, and then they have only a faint idea of the gorgeous display they make. Viewed from either end the sight is grand.

In the back border the following varieties are grown:—Lavinia Maggi, Elegans, De la Reine, Hendersoni, Ochroleuca, Imbricata, two or three specimens of the old Double White, Commandatore Batti, and Jeffersoni. The front bed contains the following:—Jenny Lind, Candidissima, two Lady Hume's Blush, Jubilee, Duc de Bretagne, Fimbriata, Tricolor, Auguste Delfosse, the gorgeous Carolina, with its deep crimson flowers 6 inches in diameter, and the red and white varieties of Mathotiana, the former having many flowers over 8 inches in diameter, and an unnamed pink variety. On the back wall are Reticulata (so very seldom met with, but how beautiful with its large rose-coloured flowers!), Alba plena, Pelaskea, Madonna, Sacchi Nova, and a fine white variety with rose marbling. No insects are to be seen, the garden engine playing an important part in their extermination. The borders are well drained, and good sound loam forms the compost.

Credit is due to Mr. Kipps for the excellent condition of the plants; but throughout the grounds the same conditions are observable. A large number of ripe Strawberries were to be seen in various houses, plenty of flowers alike in conservatory and plant houses, and vegetable ground and pleasure grounds neat and trim.—R. P. R.

### THE GHENT SHOW.

WE did not send a reporter to Ghent this year for two reasons:—1, Because the usual Press ticket did not come to hand; 2, because much smaller interest appears to have been manifested in the event than has been evident on former occasions in this country. We could only ascertain that two or three of our home firms would enrich the Show by their produce, the majority not contributing, though several would attend to see the general exhibits.

We have often described the quinquennial shows. They are always great, as they should be after five years of preparation, always picturesquely arranged, always very much like each other in general character, and visitors always receive a pleasant reception. There is always an imposing display of lofty Palms and Cycads, with luxuriant foliage plants, floriferous masses of Indian Azaleas, such as cannot be seen elsewhere, glowing banks of hardy Azaleas, with an extensive



display of Orchids. In these plants, however, England excels, also in practically all other flowers with the exceptions above named.

English groups have often brightened the great floral halls of the old Flemish city, and this year they were not wholly absent. A hundred Hippeastrums ("Amaryllis") were sent from the renowned collection of Messrs. Veitch & Sons, Chelsea, and these could not be staged anywhere, no matter how rich the surroundings, without commanding attention and admiration. Then the consignment of Ericas, Epacrises, Pimeleas, Aphelexes, Boronias, and plants of that nature such as Messrs. Cutbush & Sons sent over would constitute a feature, and their chaste beauty could not fail to be appreciated. With the exception of the above firms, and of Messrs. F. Sander & Co., we have not heard of other of our home friends sending plants or flowers. The St. Albans firm we are informed had the honour of winning the first prize for the following six new plants:—*Strobilanthes Dyeriana*, *Alsophila atrovirens*, *Alocasia Watsoniana*, *Ludovia crenifolia*, *Dracæna Godseffiana*, and *Dracæna Sanderiana*. Messrs. Sander & Co. also exhibited, not for competition, *Carludovica Lauehana*, *Maranta Sanderiana*, *Oreopanax Sanderianum*, *Pandanus Baptisti*, *Vriesia tessellata variegata* var. *Sanderæ*, and *V. fenestralis Germiniana*.

The grounds surrounding the casino always present a different appearance from the "outside" shows at home, inasmuch as we possess none of the stately globular and pyramidal Bay trees in tubs, grown and trimmed by years of patient labour and skilled attention. They produce an effect all their own, but are too formal to meet with popular favour in this country, though they afford appropriate ornaments to terraces. There is always a great show of glass structures, but it may be added when Messrs. Foster & Pearson exhibit, as on the present occasion, the substantial character and finish of their work stand out bold and clear amongst whatever may be seen around them, though it is becoming evident that the Notts exhibits have not been without educational effect on observant natives of the busy, and we are sorry to say now troubled, little kingdom.

Besides the showing of plants, flowers, and gardening appliances, there is the banqueting of the jurors and others—always done well, not to say lavishly—with attendant glass chinkings, effusive handshakings, oratorical displays, and operatic wind-ups; then comes the visiting to nurseries and elsewhere in search of novelties; and after this the floral pilgrims wend their way to their respective homes in different lands, leaving a little money and sundry orders behind them, also work for the busy Belgians in clearing out their stocks. The quinquennial is well known as a gigantic trade organisation, splendidly managed, and the efforts of the shrewd and enterprising conductors to make it a success and the talk of the world is beyond all praise. That is what they do, and no other body in Europe, if in America, could do it so well. All the nurserymen appear to the unsophisticated visitor as if they were members of one great firm till the event is over, then the usual trade rivalry is resumed and continued till the next Quinquennial.

This general sketch of the Ghent gatherings will do as well as going to the Show, to repeat practically what has been said before, and it has this advantage for the sketcher—namely, he escapes the *mal de mer*.



#### HARDY FRUIT GARDEN.

**Disbudding Fruit Trees.**—The commencement of this important operation has been rendered necessary somewhat earlier than usual, owing to the advanced state of many trees which the early spring has pushed forward into growth. Though, however, a beginning has been made in many districts, it is not desirable to complete disbudding all at once, but to extend it over a period of some weeks.

**Apricots on Walls.**—These being the earliest in growth need attention first. Carefully note every portion of the trees, and rub off or remove cleanly with a sharp knife all the misplaced shoots. Such growths on wall trees are usually situated behind the branches and facing the wall, where they practically are of no use. In all cases commence disbudding in the upper parts of the trees, where activity and vigour is first apparent. Well thin-out shoots which proceed from the front of the branches. These, if left, form the foreright shoots or breastwood, and only a fair number should be retained. Their position in front of branches does not enable them to be laid in as succession shoots, so they may be pinched at the second pair of leaves, resulting growths afterwards at one leaf. Shoots of this description will form artificial spurs, upon which fruit will eventually be produced. Well-managed Apricots also form natural spurs freely, which must always be preferred if situated in suitable positions. A fair number of young shoots all over the trees must be selected from the growths at the base of the fruiting shoots or originated in other positions to take the place of the latter when they are cut out in the autumn. The shoots on the fruit-bearing wood gradually reduce, leaving a few here and there below the young fruit if necessary; but in all cases level with or above the fruit, one vigorous extending growth ought to be left to aid the circula-

tion of sap to the swelling fruit. Such shoots are pinched when three or four good leaves have been formed.

**Peaches and Nectarines.**—These require similar treatment, but differ from the Apricot in usually being confined to young wood only for bearing fruit. Peaches and Nectarines do not furnish natural spurs so readily as the Apricot, but artificial spurs may be produced by following the same method of pinching as recommended for the latter. Spurs, however, are not essential, as enough well-placed young wood can be secured annually. Commence the removal of superfluous wood growth by rubbing or cutting off all the ill-placed growths, those at the back being first attended to, afterwards those which point outwards, forming the breastwood eventually, if not removed. If retained they could not be utilised for training in, being so awkwardly placed. At the same time proceed to thin out gradually the growths situated in the more favourable positions, selecting one of medium vigour at the base of each fruiting shoot for training in. Select one at the top also, and reserve this for attracting sufficient sap to the fruit to aid its development. Most of the growths which lay between may be removed before disbudding is finished. One-third of the tree or a little less can be operated on at a time, in all cases commencing at the top, working downwards, and proceeding gradually.

**Plums and Cherries.**—The removal of useless shoots is likewise beneficial to these as to other trees. Disbudding is chiefly practised to remove gross shoots which are easily detected, as they commence to grow with exceptional vigour. Of the other growths on wall trees some may be thinned out, the best placed reserved for training in as extensions, or to fill vacancies between the principal and subsidiary branches, the rest pinched back when two pairs of leaves have been formed. Restricted trees in the open ground, such as espaliers, pyramids, and small bushes, will also be benefited by removing many of the inward growing shoots, which would be liable to choke the trees with growth that cannot possibly be perfected from their inability to obtain light and air. Suppress all gross shoots which start away from old wood, and for which no place can be found.

**Apples and Pears.**—Look over the trees on walls, so that any useless shoots and those pointing in wrong directions may be removed entirely. Judicious thinning, if necessary, will improve the shoots left, giving more abundant light and air to the short promising buds close to the wall, and which it is desirable should soon develop into fruitful conditions. Besides the wall trees, espaliers, bushes, and pyramids those in the open will be much benefited by close scrutiny. The weakest buds that bear no promise of future usefulness closely remove, shoots of gross or undue strength rub off, and those retained leave sufficiently wide apart, so that a fair share of sunlight and air can penetrate to the interior of each tree whatsoever its form.

**When to Disbud.**—The weather regulates the operation of disbudding considerably. When moist and warm growth is more active, consequently less time can elapse between the removals. During the prevalence of cold drying winds the sap does not flow freely, therefore it would be unwise to disbud except very sparingly. The first disbudding should take place as the flower petals are falling, the second a few days afterwards, or longer, according as the trees require greater or less attention. Follow on at intervals until all the superfluous shoots have been discarded.

**How to Disbud.**—The removal of soft young growths can mostly and easily be effected with the finger and thumb, but sometimes difficulty is experienced in accomplishing this without injuring the surrounding bark owing to the base of the shoots having attained a woody character. They should, therefore, in such cases be detached with a sharp knife, as to tear and injure the bark is decidedly wrong, frequently leading to canker in some trees and gum in others.

#### FRUIT FORCING.

**Peaches and Nectarines.**—*Earliest House.*—The early varieties started in December are now taking their last swelling, Alexander being first, closely followed by Early Louise. The fruits must be kept dry after they approach ripening, and the leaves having been drawn aside and the fruits raised by means of thin laths placed across and secured to the trellis so that the apex will be exposed directly to the light, they will be thus coloured well, and possess the highest quality. Syringing must be continued in the case of such varieties as Early Alfred, Hale's Early, and Royal George or Stirling Castle until the fruit commences to ripen. Supply water to inside borders liberally, and give liquid manure to weakly trees carrying a heavy crop. Keep the shoots well tied down, thinning them where required, so as to give the sun and air access to the fruit for the ripening process.

*Trees Started Early in January.*—The fruit being now stoning must not receive a sudden check, as that occasioned by cold air in the day and too close and high a temperature at night and on dull days. A temperature of 60° to 65° at night in mild and 5° less on cold nights is sufficient, 65° not being exceeded on cold dull days, but allow 70° to 75° with gleams of sun, and 5° to 10° advance on bright days, with free ventilation. Expose the fruits to the light, for the darker they are before ripening commences the higher coloured and better flavoured they will be when ripe.

*Succession Houses.*—Trees started in February are swelling the fruit freely. Assist weakly trees with liquid manure or surface dressings washed in, but avoid stimulating them too much, as that is prejudicial to stoning, and avoid sudden depressions of temperature or the admission of cold air. A night temperature of 55° to 60° is sufficient for the present, allowing an advance to 65° by day with air, and 70° to 75° with



full ventilation. Attention must be given to the following operations according to the respective condition of the trees.

**Disbudding.**—Too early disbudding has a tendency to hinder the first swelling of the fruits, and there is danger of rendering the shoots too gross, which is inimical to the fruit stoning satisfactorily and the future crop. It should not be begun until the fruit is well set and swelling, yet there must not be any delay in commencing this operation as soon as the shoots can be displaced with the finger, continuing it from day to day, or at short intervals, until all the superfluous growths are removed, leaving only those required for the perfection of the current crop for producing next year's and the extension of the trees. One shoot must be trained in from the base of that now bearing, another on a level with or above the fruit, pinching it at the second or third good leaf, and a growth encouraged from the extremity of extensions, training those in their full length, having the main branches about 12 inches apart and the bearing shoots 15 inches asunder, calculating from the base on last year's wood. Close training results in weak overcrowded growths; all should be well exposed to light and air to secure sturdy shoots with well developed buds and thoroughly ripened wood.

**Thinning the Fruits.**—When the fruit is the size of horse beans the smallest, ill-shapen, and worst placed, as those on the under side of the trellis, should be removed first, commencing with the weakest parts of the trees, thinning proportionately more there than on stronger wood, which from carrying more fruits will tend to the equalisation of the sap, consequently vigour of the trees. The fruits should be thinned again when the size of small marbles, doing it in all cases gradually, and after the fruits attain the size of a Walnut only a few more than those required for the crop need be left to meet casualties in stoning. One fruit of the large-fruited varieties to every square foot of trellis covered by the trees is a fair crop. Those that produce medium sized fruits may be left at every 9 inches square, which is a suitable distance for Nectarines.

**Tying-in the Young Shoots.**—To heel-in the young shoots early is essential to symmetrical training, and it must be done so as to give the proper direction to the growth without breaking it, leaving sufficient space in the ligature for the swelling of the shoot. This is of the utmost importance as a safeguard against gumming. After the right inclination is imparted to the shoots very close tying-in is undesirable until the final one before the fruit commences ripening.

**Syringing the Trees.**—This must be practised twice daily on all fine days and on all trees not in flower or with the fruit ripening, for they must be kept free from red spider, as when it gets a hold it is difficult to dislodge, and allowed to have its own way it materially affects the present and succeeding crop, often ruining both. In dull and wet weather syringing should not be practised in the afternoon, and in the case of vigorous trees less syringing is necessary than for those with stouter foliage. The afternoon syringing should be done at closing time, so as to have the foliage nearly dry before night.

**Feeding and Watering.**—Whenever inside borders become moderately dry a thorough supply of water should be given to render it regularly moist to the drainage. Watering borders needlessly only tends to sappy growths, and its opposite extreme of dryness induces stunted wood, with a preponderance of blossom buds, and aids red spider. Weakly trees may be assisted with nitrogenous manures, as liquid manure from stables or cow houses properly diluted with water, mulching the border with short partially decayed manure, which will keep the roots at the surface, but it is little use unless kept moist, yet not constantly soddened. Free growing trees, on the other hand, should have due supplies of superphosphate, say 4 ozs. per square yard, but no mulching, or only slight to prevent the soil cracking and keep it evenly moist. Thomas' phosphate powder may be used where the soil has become close and full of humus at a similar rate to the superphosphate, both being employed at intervals of about six weeks as the cases require.

**Late Houses.**—Still continue to fertilise the blossom, selecting the early part of fine days for the operation. Where there are means of affording heat the temperature should be maintained at 50° by day, and 40° to 45° at night, in all instances accompanied by a little ventilation at the top of the house, increasing it when the temperature reaches 50°, and having it full at 65°. In unheated houses commence ventilating at the same temperature, and close at 65° when there is a prospect of frost at night. A light syringing after the fruit is set will aid it in casting off the remains of the flowers, but it should be practised early in the day, so as to have the trees and house dry before night.

**Pines.**—Young plants in course of preparation for fruiting are rendered soft, drawn, and weakly in preparation by a close atmosphere, which should be avoided by the employment of as little fire heat as practicable, husbanding the sun heat, and maintaining a moderate moisture in the house, by which means robust growth, combined with a sturdy habit, is secured. Maintain, however, a night temperature of 60° to 65°, and 70° to 75° by day. Commence ventilating at 75°, gradually increasing with the temperature to 85°, keeping it through the day at that heat from solar influences, or 90° to 95°, with abundance of air. Sprinkling will be necessary at closing time, also in the morning, but do not close the house at a high temperature, and syringe the plants about twice a week. Keep the bottom heat steady at 85°, or not less than 80°, nor exceeding 90°. Examine the plants regularly twice a week, and when water is required (only then) apply it liberally.

Weak liquid manure (guano being, perhaps, the best) may be applied to plants swelling, but not ripening their fruits, and little or no water should be given these. As the fruit ripens both plant and fruit may be removed to a cooler house, which will permit the fruit being kept sound for a lengthened period, longer, perhaps, at this time of year than any other.

When the suckers of fruiting plants become large enough screw out the centres of those not required for stock; one, or at most two, suckers should only be retained to a plant. In the case of large panes of glass, and the sun very powerful, a slight shade for an hour or two at midday will be of service; but with small panes of glass it will not be needful. If the plunging material settles down from the pots apply fresh to the surface to keep the pots from being acted on prejudicially by the atmosphere.

**Melons.**—*Earliest Crops.*—The fruits are now approaching maturity, March having been the finest month for Melons during the past eighteen years—rainless, sunny, and not particularly sharp. In damping the house avoid wetting the fruits, as that would cause those with hard rinds to crack, and, though a drier atmosphere and similar condition of the soil is desirable when the fruit is ripening, its quality or finish depends on clean healthy foliage, and if care is taken to keep the plants healthy a second crop of fruit will set without much trouble. This crop will be considerably advanced in swelling and without prejudice to the first crop by the time it is ripe, all flowers being removed after a sufficient number of fruits has been secured for the crop, attending to the usual stopping.

When the first crop is gathered supply a little fresh warmed lumpy loam and water freely, following at once with rather thick but not overstrong liquid manure, and sprinkle a little superphosphate and nitrate of potash on the bed occasionally, say a small handful of this mixture, three parts dissolved bones, one part powdered saltpetre, and one part ground gypsum mixed. Keep well syringed, well nourished, and the plants will supply not only a second crop of fine fruit, but sometimes a third or fourth, provided bad leaves are removed, new growth encouraged, and it is kept clean and healthy.

**Succession Houses.**—Plants in these require frequent attention for stopping, tying, thinning the shoots, impregnating the fully expanded blossoms in the middle of the day when the pollen is dry, acting upon a sufficient number on a plant about the same time to secure a regular set, so that the fruit may be of a simultaneous stage of swelling, which is essential to full crops and uniformity and size. Houses that have been used for winter Cucumbers may be utilised for Melons. Remove all the old soil, scrub the woodwork with soap and water, using clear only for the glass, and wash the walls with limewash with a handful of sulphur in each pailful. Good turfy loam, with an admixture of old mortar rubbish and some road scrapings, form a suitable compost. If heavy add about a fifth of burned clay to the loam, placing the compost compact in the ridges or hillocks, and when warm put out the plants and press the soil firmly around each.

**Pits and Frames.**—Excellent Melons can be grown in these after they have been cleared of forced Potatoes. The seed to furnish plants should now be sown and the plants be grown and stopped at the second rough leaf, so as to have them strong, but not stunted by keeping them root-bound, for planting in the beds, which, as a rule, will only require an addition of fresh fermenting material mixed with the old to a depth of about 18 inches, so as to generate a gentle warmth and give the plants a start, the sun heat doing the rest.

**Cucumbers.**—Plants in houses will require abundant moisture both at the roots and in the atmosphere, damping frequently and syringing the plants both ways about 3.30 P.M., closing at the same time or earlier, according to the weather. Shading will be necessary in the middle of the day for an hour or two in bright weather to prevent flagging; but with the roots healthy and abundant, and moderate ventilation, little shading will be needed. To maintain a good supply of fruit with regularity, frequent attention must be given to the stopping, thinning, and providing a succession of young growth, cutting out the bare and exhausted and avoiding overcropping. Supply an occasional top-dressing of lumpy loam to which a third of sweetened horse droppings have been added, and afford water at the roots when necessary, always before the plants are distressed, but never before the soil is becoming rather dry, as a sodden soil is very pernicious.

In watering plants in pits and frames do so sufficiently early to have the foliage dry before night. Maintain a good bottom heat by renewing the linings, being careful to avoid rank steam inside the frame by the soil being parted from its sides, or the night covering hanging over the linings. Still employ mats or other material over the lights at night, which are yet cold. Ventilate early, or at 75°, and moderately, maintaining through the day at 80° to 90° from sun heat, husbanding the latter by early closing, a temperature of 90° to 100° not doing any harm, but good, provided there is plenty of moisture. Avoid overcrowding, keeping the shoots stopped to one joint beyond the fruit, removing bad leaves as they appear. If wireworms be troublesome, as they sometimes are when turf is used, baits of Carrot inserted in holes just within the soil will attract them, the baits being examined daily, and the wireworms destroyed.

For woodlice baits of Potato, Beet, or Mangold Wurtzel, with the middle scooped out, form good traps, or a boiled Potato wrapped lightly in a little hay in flower pots, and placed where the woodlice abound, and examined daily, soon clear them. A toad placed in the frame will soon destroy the woodlice.

#### THE FLOWER GARDEN.

**Auriculas.**—Choice or named varieties are usually increased by means of slips and rooted divisions taken after the flowering period, and the more generally grown alpine section can be similarly propagated. Seedlings, however, are the more vigorous, equally floriferous, and are easily raised. If the seed was not sown last month it is not yet too late



to sow it. Fill either well drained pans or boxes with fine loamy soil to which sharp sand has been added, make this firm and level, give a gentle watering. Sow the seed thinly two hours later, and cover with fine soil. The seed will germinate more quickly in very gentle heat, but will do so rather more surely if placed in a cold frame or handlight. Cover the pan with a square of glass, shade from sunshine, and keep uniformly moist. Auricula seed is apt to germinate very irregularly, the seedlings appearing at comparatively wide intervals. The soil in the pans or boxes ought not, therefore, to be hastily broken up, the wiser plan being to carefully lift out the seedlings as fast as they are large enough to handle, placing them singly in small pots. The seedlings should be kept in a frame till the pots are becoming well filled with roots, when they may be planted out in a sheltered spot.

**Polyanthuses and Primroses.**—Seed of these may be sown either in boxes or in the open, but the seedlings will be of little service as far as flowering next spring is concerned. If the soil is at all dry moisten it prior to sowing the seed rather than afterwards, and if good room is allowed there will be no necessity to prick out the seedlings; but they will make grand plants if taken in hand early next season. If the seed was sown in gentle heat under glass early in March it will be an easy matter to grow the seedlings to a good size during the summer, or quite large enough to give a fine display of bloom next spring. If the seedlings are now in a crowded state prick them out 2 inches apart in boxes or pans of good loamy soil, and keep in a frame till well rooted, after which a sheltered or cool border and fairly good soil will suit them best. Both Polyanthuses and Primroses divide readily after flowering, and all the best forms, notably the yellow flowering varieties of the former, should be marked now, and being duly divided and taken good care of it will be possible to mass the colours next season. Seed-saving is not advisable unless the strains are extra good and no inferior forms have been allowed to flower among them.

**Violets.**—These were much injured in some instances last winter, but have grown well since, and the time has arrived for dividing and replanting. They experience the least check when lifted and divided after the first series of young leaves have matured somewhat. A strong or over-rich soil is not suitable for Violets, as it is apt to cause a rank growth, and which is the first to succumb to frosts. A free admixture of leaf soil, fresh loam, and sand to the ordinary garden soil is what Violets like, or leaf soil alone can be used. If there is any choice let the Violets have a border sloping westwards, and they are most reliable when grown among thinly disposed fruit trees. Lift the old plants with a fork, pull to pieces, and select the younger divisions or runners having a few roots attached to them. Plant them 9 inches apart in rows 12 inches or rather more apart, taking care to bury and firmly fix the whole of the hard stems. Give a watering, and roughly shade from bright sunshine for a time. The Russian section, notably The Czar, are the hardiest and most serviceable; but the doubles, including Neapolitan and Marie Louise, frequently pass safely through the winter, and are very gay in the spring.

**Violas.**—Old plants left in the open borders are fast coming into flower, but if they are required for affording a summer display, this tendency to early flowering must be checked. Dividing and replanting should take place soon or before hot weather sets in, or they will fail to become well established, and mildew complete their ruin. Give them the benefit of a liberal dressing of either good leaf soil or decayed manure about the roots, and after having pulled the old plants to pieces replant firmly, watering if the soil is at all dry. Nor ought there to be any long delay in getting out autumn-struck plants, as these also are liable to fail badly if not well established before the summer is upon them. If it is intended to intersperse Violas among variegated Pelargoniums, Iresines, and such like, mark out the spaces for these latter, and plant the Violas freely between. Beds or edgings of mixed Violas are very gorgeous, especially during the early part of the summer.

**Beet.**—The richly coloured varieties of garden Beet, than which there are none more reliable than Dell's Crimson, or more elegant than the Dracena-leaved, are very effective in the flower garden, being good substitutes for either Iresines Lindeni or Perilla nankinensis. These Beets are suitable for the second or third row in ribbon borders, and go well next to a margin of Stachys lanata in large beds. They may be raised thinly in boxes and transplanted, but succeed best when sown where they are to grow. Towards the end of April is a good time to sow the seed, and this should be done thinly in shallow previously moistened drills. Protect the seedlings from birds and slugs, and eventually thin to a distance of 9 inches apart, rather more space being allowed if the soil is somewhat strong.

**Gladioli.**—If these are kept out of the ground much longer the chances are many of them will fail to flower in time to escape destruction by early autumn frosts. If extra fine spikes are needed plant in a deep, rich, freely working, and well drained position, and if the corms can be surrounded by fresh gritty loamy compost so much the better. Whether they should be dotted thinly among other summer flowering plants of a trailing habit, notably Mignonette and Verbenas, or be planted in either groups of three, or 12 inches apart in lines 18 inches apart, must depend upon circumstances, the latter being the best arrangement if show spikes are desired. In any case bury the corms about 2 inches below the level, setting them in silver sand.

If extra early spikes of flower are wanted start the requisite number of corms singly in 4-inch pots under glass, and plant out before they become badly root-bound. Choice varieties may safely be increased by division whenever the corms show more than one crown. Start them in

boxes under glass, cut them cleanly through when the shoots are 2 inches high, return to the boxes, and finally plant out when they have started rooting afresh. Small corms obtained either by sowing seed or from the base of the older corms, may now be planted 3 inches apart in shallow sand-lined drills, 12 inches apart. In the course of two seasons they will develop with strong flowering corms.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### THE WEATHER.

FROM different parts of the country the desire for softer winds and rain is general. During the week ending on the 14th only on two mornings was the temperature above 32°. On other mornings from 5° to 6° of frost were registered, the day temperatures rising to 58° and 68°.

#### THE APIARY.

The weather has been too dry, and the air too cold for the bees to derive much benefit from the Gooseberry blossoms. The smoke that persistently hangs around and over us injuring vegetation and hindering bees is unknown in some districts, where the bees are more advanced than with us, and have done tolerably well upon the blossom. It is evident that near towns and public works bees cannot thrive so well as where the atmosphere is clear, even although flowers are as profuse in the former places as they are in the latter.

#### QUEENLESS STOCKS.

At this season of the year it sometimes happens that queens from various causes become barren, and leave the hive with the bees *en masse* as a swarm—described by some who know no better as a “hunger swarm.” The queen should be caged, and after a while destroyed, and the bees joined to another stock. I never require to examine stocks to learn their actual condition as regards foul brood, or being broodless. I can by the smell and the manner of the working of the bees diagnose all such cases. Inexperienced bee-keepers when they observe a falling off of the industry of the bees should make an inspection of the hive, and take action accordingly.

#### DRONES AND QUEENS.

These are numerous in many hives, and the bee-keeper need not be backward in taking steps to raise a few queens. The oldest queen regnant may be removed with some bees and the combs, while the remainder may be left, contracting the hive to keep it crowded for the better raising of royal cells. It must be understood that after these young queens are laying the original bees and queen, if desired, may be assisted with brood, so that there will be neither loss nor decrease in stocks by the manipulation. On the other hand, in most districts a decided gain will be effected, as the surplus queens can either be employed to advantage on the two queens in one hive principle, or take the place of the queen of other stocks that have swarmed.

#### CARNIOLAN QUEENS.

A correspondent has submitted to me a number of bees, the progeny of an imported Carniolan queen. He says, “I understand there is a difficulty in getting the pure breed now.” The bees in question were undoubtedly crosses—not merely first crosses, but a decided mongrel breed, 90 per cent. of them showing the orange bands and other characteristics of the Italian bees, there being only one greyish bee, and it did not show much if any Carniolan features. It is to be regretted that for mercenary purposes the pure, amiable, and industrious Carniolans should be destroyed. I am also in receipt of a letter from another correspondent, who asks if I observed what “Gleanings” had to say on Punics and their enemies. I did read all that my correspondent asks, and a great deal more that I should have been ashamed to write. It would be a good thing for bee-keepers if they would think and act for themselves, and take steps so that they could get everything pure and truthful, including bees and literature. Societies have only to take the proper steps, and it will be the fault of bee-keepers if they fail to bring about the needed reform.—A LANARKSHIRE BEE-KEEPER.

#### BEE KNOWLEDGE WANTED.

I SHALL be extremely obliged for very much fuller particulars as to bees, certainly Punics, and by all means straw hives; but more knowledge than this is surely needed. I know nothing. The book I obtained two or three years back, and which effectually



choked me off, was "The British Bee-keeper's Guide Book," by T. Cowan. I want to know where Punics are to be had. Do I start with a swarm or a queen? Where are those hives to be obtained? My idea of a straw hive is to smoke the bees, which I thought was brutal and obsolete.—S. J. A.

[Persons who are unacquainted with bees, and intend keeping them, should learn that from January till March there are only workers and one queen in the hive. The hive, to be profitable, should contain not fewer than 30,000 bees, with the queen healthy and prolific. After March drones may be expected. Sometimes fertile workers appear whose progeny are drones only.

Bees are subject to diseases. Foul brood is the scourge of the apiary, and is to be most dreaded; overheating or stifling the bees is the principal exciting cause. This scourge is known by the seals of the brood being concave and perforated, the larvæ brownish, and of a gluey nature, with an offensive odour. The bees should be transferred from affected to clean hives, and all their belongings disinfected. Dysentery is a preventible disease; immunity from it depends upon the preparation of the hives and food in autumn. Pure sugar is the safest food, and hives should be kept free from sudden changes of temperature, and perfectly dry, covering them with porous material and a ventilating floor; *vide* back numbers of the *Journal of Horticulture*. A cosy site is another good point, with a free flight, but no pools of water near their hives, nor vegetables such as Cabbages.

Stinging in bees depends upon their treatment. They should be frequently approached in a calm but firm manner by the owner, so that he may not be a stranger to them. When manipulating carbolic acid should be used sparingly at the entrance and on the tops of the bars, having in the hand a feather saturated with it to cause the retreat necessary for inspection. The novice should then take note of all he sees, so as to know healthy bees, combs, and to recognise queen, workers, and drones, as well as the imperfect bees that are neither one nor the other. Bee-keeping after all those things are learned or partially known is comparatively an easy task.

Straw hives are the best to start with, putting their swarms into good frame hives. The novice thus gradually learns his way, and is in a better position to manage his bees successfully than if he started with frame hives. Straw hives are the easiest to manage, but honeycomb in quantity and quality is less from them than frame hives, and is mostly run honey. When the combs are renewed annually there is less danger from foul brood. The second or after swarms having youthful queens are best adapted for stocks, and the new made combs of such hives are white, and comparatively free from drone comb.

Crossed Punics are in my experience the best bees, though the pure ones may equal them; but owing to inauspicious seasons I have not been able to test them fully. Beginners should, however, be contented to start with any bees until they know something about their working qualities, then try one variety against another, the only accurate method. Straw hives can be had from Messrs. George Neighbour & Sons, 127, High Holborn, London, and Punic bees from Mr. J. Hewitt, Cambridge Street, Sheffield.

The Lanarkshire Frame Hive is one of the oldest and best British hives. I have used it more or less since 1852, and in one or other of modified forms is becoming popular in England, America and other Continents. From its storifying nature it, to a beginner, is not quite so handy to manipulate as a more cumbersome modern hive, but in other respects eclipses them all, and when a little experienced the seeming difficulties evanesces. A beginner, might, to initiate himself, practise with a modern hive, or perhaps better with the top division (the first year) of a Lanarkshire storifying hive. I do not know who makes these specially, but Messrs. Warnock and Walker, Blantyre, occasionally make a pattern hive for beginners.—A. L. B. K.]

#### TRADE CATALOGUES RECEIVED.

J. Cheal & Sons, Lowfield Nurseries, Crawley.—*Dahlias, Chrysanthemums, &c.*

Merryweather & Sons (Limited), Greenwich, Kent.—*Rubber Hoses and Garden Watering Appliances.*

#### GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, London, W.



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Artificial Manures (H. T. H.).**—We know of no work devoted to the "mixing of artificial manures." When the different kinds required are obtained they are as easily mixed as the various ingredients are in the preparation of composts for plants.

**Daffodils from Seed (H. H.).**—We cannot better reply to your questions than in the form of a brief narrative of our own experience. We gathered ripe seeds in 1891 and sowed them early in the same autumn in boxes of free loamy soil in a Pearson's frame, in which they remained through the winter. The plants grew in those boxes till they died down, and after the small bulbs had rested for a time they were planted in the open ground early in September, 1892. Two of these seedlings flowered this spring, and many will do so next year, though we do not expect all of them to do so.

**Raising Anemones (A. M.).**—Single Anemones are readily raised from seeds, and plants raised early by sowing now commence flowering next year if grown in fertile soil. The year following they will be very fine if the tubers are not disturbed. The seed being very woolly must be separated by rubbing it with sand, and then scattered in drills about 6 inches apart and 1 inch deep, saturating them before sowing if the soil be dry. Should bright weather follow it will be advisable to shade the beds with mats or some other material, as the seed will not germinate freely; and shading is much better than watering after sowing. If the seedlings are crowded patches of them may be dug up with earth adhering to the roots, and transplanted in showery weather in summer. Fresh seed should be obtained, as the old does not germinate freely.

**Woodlice in Mushroom Bed (A. F. G.).**—If you cut Potatoes in halves and scoop out much of the inside of each portion and place them about the beds they will attract numbers of these insects, and they may be instantaneously, hence painlessly, killed by shaking them into boiling water. Boiled Potatoes enveloped in a little hay and placed in empty flower pots and these laid on their sides prove enticing to woodlice, while pieces of Parsnips boiled in an arsenical solution are deadly baits. We do not think you have much to fear from millipedes, which may be caught in a similar manner as woodlice. They have a partiality, however, for decayed matter, and do not object to a decaying Apple or bread smeared with treacle. If there are fissures at the sides of the bed the insects will congregate there, and boiling water poured in will prevent their coming out again, but it must not be sprinkled on the surface of the bed.

**Bougainvillea glabra (A. M.).**—The first mistake you appear to make is drying your plant as soon as it has ceased flowering. You should be certain that the plant has finished its growth and the wood is thoroughly ripe before the supply of water is reduced, and it should then be of the most gradual description. Pruning should not be done until the plant is resting or has been at rest a few weeks. This should consist of removing all weak growths and any portion of strong ones that are not thoroughly ripe. The weak ones may be pruned back to one eye or cut out entirely, while strong ones may be left 1 to 3 feet, according to their strength, ripeness, and requirements. If a plant is sufficiently furnished with moderately strong shoots then the whole may be pruned to one or two eyes. You should reduce the ball by one-third or half its size as soon as the plant has broken into growth, and not wait till the shoots are 6 inches long. The plant should be establishing itself by the time you repot. Does it fill the pots thoroughly with roots? if not, do not repot it annually, but merely top-dress with rich material, removing as much of the surface soil as possible. A suitable compost for this purpose is loam and one-third decayed manure. For potting we should dispense with the leaf mould and peat, using only good fibry loam, one-seventh of decayed manure, with a little sand and charcoal. You should not pinch the strong shoots; allow them to extend, for they will flower profusely if you grow the plant fully exposed to the sun. Thin the weak shoots so as to give those remaining room to increase in strength. More flowers are produced by a few good growths than from



twice the number of weak shoots. This plant will do in the same pot for a number of years, provided it is top-dressed when it breaks into growth and judiciously supplied with liquid manure during the season of growth. Be careful in watering, and place the plant for a time in a warmer house.

**Repotting Ericas** (W. W.).—The advice not to attempt to liberate the roots from the soil when repotting applies equally to summer and winter-flowering Heaths. A little root-disturbance by removing the crocks, also by clearing away a portion of the loose surface soil, is all that should be permitted in transferring Ericas from small into larger pots, and even in those respects the work of liberating the roots must be done with great care and much caution. In potting these plants it is important that both the soil in which the roots are established, and that to be used is healthily moist. If either too wet or too dry success will not follow. The new soil must also be pressed as firmly round the roots as the old is, a blunted stick being used for that purpose. Many Ericas are spoiled by potting them too lightly and disturbing the roots needlessly.

**Daisies on Lawns** (H. B.).—The presence of Daisies in lawns is nearly always indicative of poverty of soil. An excellent dressing is a mixture of superphosphate of lime and nitrate of soda, two-thirds of the former and one-third of the latter applied during showery weather at the rate of 2 ozs. per square yard at intervals of a fortnight. If dry weather prevails it is a good plan to well water the lawn before applying the fertilisers, and then again afterwards to convey their virtues to the roots of the grass. Mixtures of guano and salt and soot and salt also act beneficially, so also do bonemeal and wood ashes. We mention these different ingredients in order that you may use what is the most convenient or readily obtainable. The most effectual mode of destroying Dandelions and Plantains is to drop a little sulphuric acid into the heart of each plant, as was recently recommended in these columns. Some persons have found lawn sand effectual in destroying Daisies.

**Azaleas and Heaths Unhealthy** (J. H. C.).—Azaleas well managed flower profusely every year. They require to be firmly potted in good peat soil with a little leaf mould and sand intermixed and very carefully watered, neglect or mistakes in this respect quite nullifying everything else that may be done for them. If once the soil gets quite dry the hair-like roots shrivel, the leaves fall from the plants, and flowers consequently cannot be produced. A greenhouse temperature suffices, a little extra heat in the spring when growth commences, and copious syringing being advantageous. Plants that are very unhealthy are difficult to restore. Close pruning will not benefit them, but removing a good portion of the old soil and repotting in fresh of the nature indicated, using pots as small as possible, and pressing the soil very firmly, always keeping it moist but never saturated, placing the plants in a warm greenhouse or vinery, syringing them at the least twice a day, may possibly induce them to commence fresh growth. That is the only way in which they can be improved. Heaths are perhaps still more difficult to renovate. They must not be pruned below the foliage or they will die, and the general treatment as advised for Azaleas may be adopted, except that they will be better in a cool frame than a warm house. Only experienced cultivators can grow these plants satisfactorily.

**Epiphyllum Culture** (Amateur).—Encouraging free growth in the early part of the season under the influence of heat and moisture, and ripening it subsequently by full exposure to the sun, with reduced moisture, are the chief essentials in the cultivation of these plants. Possibly yours may not need repotting, and if not some of the old soil may be taken out and fresh added as a thick top-dropping. A successful cultivator has written as follows anent these plants:—"During the growing season they delight in a warm close atmosphere, where they can be shaded from strong sun. They must also be liberally supplied with water. When the soil is allowed to become dry their fine silk-like roots quickly perish. Many failures have arisen from the poor soil given to the plants. A very suitable compost is rich fibry loam, one-fourth leaf mould, one-seventh of cow manure, and a liberal dash of coarse sand. A little charcoal in the soil proves beneficial if the loam is inclined to be heavy. When the pots are full of roots manure applied to the surface of the soil will keep the roots in activity and assist the plants wonderfully. Directly growth has been completed the stems should be ripened by gradual exposure to light and a cooler atmosphere. This is essential if they are to flower profusely; they will not flower on growths that are soft and unripened. The advance of these plants can be prevented at almost any time after a good growth has been developed—that is, say towards the middle of September. Fatal results often attend the resting of Epiphyllums, which is due to the want of knowledge of their cultural requirements. The plants must not be removed from a close warm house to a cold one, or they suffer severely. They should be placed in a house 10° lower than the one in which they have been growing, less moisture should be given and more light. This is sufficient to bring growth to a standstill and ripen it thoroughly. Failure results very often during the ripening or resting period from subjecting the plants to a roasting system of culture. How many may have been ruined through being kept so dry at their roots until their branches shrivel! This treatment destroys roots, and the greater portion of the moisture stored in their fleshy growth is evaporated. They require a drier atmosphere than the ordinary stove, and a temperature of 50°, with just sufficient water at their roots to keep the branches in a fresh plump condition. After they are once hardened and ripened they will bear cooler treatment for a time, and may be safely kept in a cool house. If the soil is wet about the roots while the plants are in a cold house they are certain to fail."

**Leaf-mining Insects on Marguerites** (L. S.).—Your plants are attacked by a leaf-mining insect of a similar nature to those that are so destructive to Celery, Parsnips, and other plants. Eggs are deposited by a small fly which hatch into maggots, these eating out the substance of the leaves and ruining the plants. So destructive is the Marguerite pest that in many places the plants cannot be grown at all. We can only suggest one remedy. We should like you to try the effects of petroleum prepared as follows:—Boil 2 ozs. of softsoap and a lump of soda the size of a walnut in a gallon of water, stirring in briskly half a wineglassful of ordinary petroleum that is burned in lamps. When this is cool stir again and dip a plant in it, or syringe it well, but keep it out of the sun until it is dry. If this does not injure the plant add twice the quantity of petroleum, and try the mixture on another plant. So continue the experiment of increasing the petroleum so long as the increased strength does not injure the leaves, and we think it possible you may destroy the maggots without spoiling the plants.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (R. C.).—*Primula farinosa*; *Omphalodes verna*. (C. B.).—*Prunus* (*Cerasus*) *padus*, the Bird Cherry. (C. A. L.).—*Kerria japonica flore-pleno*. (A. M.).—*Primula japonica*. (F. D. C.).—*Odontoglossum pulchellum*. (N. P.).—*Cypripedium villosum*. (L. W.).—*Doronicum Clusii*. (J. N.).—1, *Pittosporum Tobira*; 2, *P. tenuifolium*, var. *parviflorum*. (J. W. M.).—*Cydonia Maulei*.

# COVENT GARDEN MARKET.—APRIL 19TH.

Prices remain the same, with a steady business doing.

## FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, half sieve .. ..	1	0	to	3	Lemons, ease .. ..	10	0	to	15
„ Tasmanian, per ease ..	3	6		9	Oranges, per 100 .. ..	4	0		9
„ Nova Scotia, per ..	12	0		17	St. Michael Pines, each ..	3	0		6
barrel .. ..	4	0		5	Strawberries, per lb. ..	3	0		5
Grapes (new) per lb. ..									

## VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Kidney, per lb. ..	0	6	to	1	Mustard and Cress, punnet	0	2	to	0
Beet, Red, dozcu .. ..	1	0		0	Onions, bunch .. ..	0	3		0
Carrots, bunch .. ..	0	4		0	Parsley, dozen bunches ..	2	0		3
Cauliflowers, dozen .. ..	2	0		3	Parsnips, dozen .. ..	1	0		0
Celery, bundle .. ..	1	0		1	Potatoes, per cwt. .. ..	2	0		5
Coleworts, dozen bunches	2	0		4	Salsafy, bundle .. ..	1	0		1
Cucumbers, dozen .. ..	2	6		4	Scorzonera, bundle .. ..	1	6		0
Endive, dozen .. ..	1	3		1	Seakale, per basket .. ..	1	3		1
Herbs, bunch .. ..	0	3		0	Shallots, per lb. .. ..	0	3		0
Leeks, bunch .. ..	0	2		0	Spinach, bushel .. ..	3	0		3
Lettuce, dozen .. ..	0	9		1	Tomatoes, per lb. .. ..	0	6		1
Mushrooms, punnet .. ..	0	9		1	Turnips, bunch .. ..	0	3		0

# AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

## Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	2	0	to	4	Marguerites, 12 bunches ..	2	0	to	4
Azalea, dozen sprays .. ..	0	6		0	Mignonette, 12 bunches ..	3	0		6
Bluebells, dozen bunches ..	0	6		1	Mimosa, French, per bunch	1	0		1
Bonvardias, bunch .. ..	0	6		1	Myosotis, dozen bunches ..	2	0		4
Camellias, doz. blooms ..	1	0		2	Narciss, var., French, dozen	1	0		4
Carnations, 12 blooms ..	1	0		3	bunches .. ..	1	0		4
Chrysanthemums, dozen					Orchids, per dozen blooms	3	0		12
bunches .. ..	2	0		4	Pelargoniums, 12 bunches	6	0		10
Cowslips, dozen bunches ..	1	0		2	Pelargoniums, scarlet, doz.				
Daffodils, double, dozen					bunches .. ..	4	0		6
bunches .. ..	1	0		3	Polyanthus, dozen bunches	2	0		3
Daffodils, single, dozen					Primroses, dozen bunches	1	0		3
bunches .. ..	2	0		6	Primula (double) 12 sprays	0	9		1
Eucharis, dozen .. ..	4	0		6	Roses (French), per doz. ..	0	6		2
Gardenias, per dozen .. ..	1	0		2	„ (indoor), dozen .. ..	0	9		2
Hyacinth, per box .. ..	1	0		3	„ Red, per doz. blooms ..	1	6		3
Lilac, white, French, per					„ Tea, white, dozen .. ..	1	0		2
bunch .. ..	3	0		5	„ Yellow, dozen .. ..	2	0		4
Lilium caudatum, dozen					Tuberose, 12 blooms .. ..	1	0		1
blooms .. ..	0	9		1	Tulips, dozen blooms .. ..	0	4		0
Lilium longiflorum 12					Violets, Parme, French, per	2	0		4
blooms .. ..	3	0		6	bunch .. ..				
Lily of the Valley, dozen					Violets (English), dozen	1	0		1
sprays .. ..	0	6		1	bunches .. ..	1	0		1
Maidenhair Fern, dozen					Wallflowers, doz. bunches	2	0		4
bunches .. ..	6	0		9					

## PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to	12	Ferns (small) per hundred	6	0	to	8
Arm Lilies, per dozen ..	9	0		18	Ficus elastica, each .. ..	1	6		7
Aspidistra, per dozen ..	18	0		36	Foliage plants var., each ..	2	0		10
Aspidistra, specimen plant	5	0		10	Genista, per dozen .. ..	9	0		15
Azalea, per dozen .. ..	24	0		42	Hyacinths, dozen pots ..	8	0		12
Cineraria, per dozen ..	8	0		12	Lilium Harrissi, per dozen	18	0		30
Cupressus, large plants, each	2	0		5	Lily of the Valley, doz. pots	12	0		18
Cyclamen, dozen pots ..	9	0		18	Lycopodiums, per dozen ..	3	0		4
Deutzia, per dozen .. ..	6	0		8	Marguerite Daisy, dozen ..	6	0		12
Dracæna terminalis, dozen	18	0		42	Myrtles, dozen .. ..	6	0		9
„ viridis, dozen .. ..	9	0		24	Palms, in var., each .. ..	1	0		15
Dielytra, per dozen .. ..	6	0		9	„ (specimens) .. ..	21	0		63
Euonymus, var., dozen ..	6	0		18	Pelargoniums, per dozen ..	12	0		18
Evergreens, in var., dozen	6	0		24	„ scarlet, per dozen ..	4	0		6
Ferns, in variety, dozen ..	4	0		18	Primula, single, doz. pots	4	0		6

Bedding plants in variety.





## LIVE STOCK—SELECTION AND BREEDING.

ONE of the most important lessons of adversity taught by hard times is the true value of the selection, breeding, and careful management of all live stock on a farm. More and more attention is given to this by all thoughtful farmers, and the paper bearing on this subject, which Mr. J. Kersley Fowler read recently at the Farmers' Club, contained such a mass of useful information as will exercise much influence upon the minds and efforts of really earnest workers in the good cause of rendering farm animals really valuable as a source of profit. The days of mongrels with no points of excellence are surely numbered, for the fact of well-bred, well-fed beasts proving so profitable in such a year of falling prices, as 1892 undoubtedly was, must carry with it conviction that only by careful selection and breeding can we hold our own now and in future under ever increasing foreign competition. In accepting and acting upon this axiom let it not be forgotten that really good work in breeding does not involve the use of pure pedigree animals on both sides, and we entirely agree with Mr. Fowler that "The thoroughbred should be on one side or the other, and it is perfectly wonderful how quickly a really fine flock of sheep or a good herd of cattle can be produced, and eventually maintained. Many a great line of grand animals can be produced by this system, and in the course of time the flock or herd is enabled to take rank as pure-bred animals."

Plenty of evidence in support of Mr. Fowler's views is forthcoming from other breeders of note. Mr. John Treadwell of Upper Winchendon gives instances of improvement in cattle, sheep, and pigs. The evidence of such famous breeders as Mr. Spencer of Holywell Manor; Mr. Duckham of Holmer, Hereford; and Mr. C. Barnes of Solesbridge, near Rickmansworth, might also be adduced if necessary. But our especial object is sufficiently apparent in calling attention now to the real value of a pedigree male animal of fine form and sound constitution for the profitable production of home reared beef, mutton or pork.

For milk also selection is of even greater importance, because of the low general average of milk yield, and the great range of milk yield from an ordinary herd of cows where any heifer is thought good enough for milking, up to the Duke of Westminster's two Cheshire herds, or others where due attention is given to selection and breeding. It is not a question of the largest animal. Take for example the marvellous little Kerry, "Red Rose," in the Kidmore Grange herd. Mr. Charles Simmons says she is not much higher than a large donkey, weighing, he thinks, about 9 cwt. She calved the last week in March, 1892, and from April 1st of that year to the same date this year she gave 4 tons 9 cwt. 3 qrs. 20 lbs. of milk, the milk being weighed morning and evening as soon as taken from her. Take also that other wonder of the same breed, "Babraham Belle," belonging to Mr. Adeane, weighing only 889 lbs., yet at the Warwick Show last year she gave from a morning and evening milking 51 lbs., or 5 gallons of milk, yielding 4 per cent. of butter fat. Among the Duke of Westminster's cross-bred Shorthorns five cows gave over a thousand gallons apiece last year, one of them actually yielding the phenomenal quantity of 1338 gallons in forty nine weeks. Every bull calf from such cows should be reared, as they must be invaluable in breeding for milk.

## WORK ON THE HOME FARM.

Good sound Oats are the only home-grown grain now being sold at a profit. The straw has been even more than usually useful for fodder, the grain used whole, kibbled, or as meal, is alike useful, and it is easily

understood how, in a review of last year, Oats were termed a most satisfactory crop. We mention this because, if rain does not soon come there must be some exceptionally late sowing, more particularly on strong clays which were ploughed up wet and are now absolutely unworkable, and Oats will be the crop to afford a fair yield of straw and grain if sowing has to be done in May.

In every locality where three or four months of free growth after the 1st of June are a certainty, we strongly advise keeping a few acres of land in reserve for an abundant supply of green Maize in September and October. The whole of it should be used before severe frost sets in; the possibility of early frost must, therefore, be taken into account in connection with this crop. If even frosts should render its use necessary in August, it would answer to grow some. The minimum yield per acre under such early use would be from 7 to 10 tons, the maximum yield from further fuller development rising to 30 tons per acre. For all farm animals it proves a great boon in late summer and early autumn always; with parched pasture bare of food as it is sometimes then, this grand summer fodder plant is invaluable.

In southern counties Rye, from 1 to 2 feet in height, is now being folded or mown, and Maize follows such a crop well, especially if sheep have been folded upon it. To have growth of full vigour from Maize we must have rich land; there is no better crop for a sewage farm, except perhaps Italian Rye Grass. Failing the sewage, we must manure heavily with whatever is available. Among other things, peat moss litter, and sawdust from a stable, are both excellent. Near large towns one or both may be had, and the ordinary stable manure, which under the existing sanitary laws has to be removed daily, will do also, provided there is enough of it. Chemical manures may, of course, be turned to, and if they are used we would have at least 2 cwt. of nitrate of soda per acre. Condition of soil must be the planter's guide in this matter, and we can only indicate generally what should be done.

## OUR LETTER BOX.

**Pasture Ready for Grazing (C. O. E.).**—The pasture which was mentioned as "so forward in growth that cows go out four or five weeks sooner than was possible last year" is in Surrey. You say that in the Midlands there is not a blade of grass on land of this description, and generally you are right, but we have seen pasture recently at Melbourne, in Derbyshire, and Ashby Folville, in Leicestershire, with a really good bite of young succulent herbage upon it. We know plenty of bare pasture now in both those counties, but the bareness is not entirely owing to a want of rain, though this of course has a retarding effect. Poverty of soil and keeping stock out all winter are the dominant reasons why pastures generally in the Midlands and elsewhere are brown and bare in winter, and backward in spring growth. You have only to make sure of perfect drainage and sustained fertility of a sufficiently high standard to have early growth, if only you withdraw cows and store cattle entirely from pasture in October. Often have we told how slow growth in spring is on poor land, how brisk on rich land; how it marks the difference between the cultivation and neglect of pasture especially, but also on other kinds of crops. Market gardeners know how important rich land is for securing early crops. We have seen a plantation of Cabbages raised from seeds out of the same bag, sown at the same time, and the plants put out the same day, but a portion of the stretch of land had been exhausted by a previous (seeding) crop. The Cabbages on this portion were fully three weeks later than those on the richer land, and not half so good. The former, in fact, represented a distinctly profitable crop, the latter as distinctly the reverse. Impoverished land would soon starve market gardeners out of their holdings, as has been the case with many, also, we fear, some farmers. Only rich land pays by affording early, full, succulent crops.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

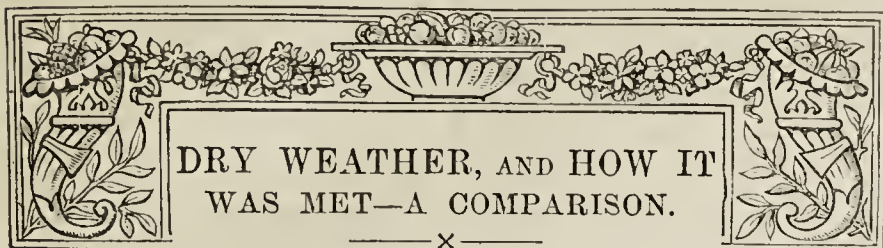
DATE.		9 A.M.				IN THE DAY.				Rain.	
		Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
1893.											
April.											
Sunday ..	9	Inchs. 30.450	deg. 44.3	deg. 41.1	N E.	deg. 47.8	deg. 62.0	deg. 38.4	deg. 98.9	Inchs. 38.4	
Monday ..	10	30.270	49.1	44.9	N.	47.8	69.9	35.9	109.2	34.7	
Tuesday ..	11	30.289	43.8	41.1	N E.	48.1	51.4	37.9	75.9	36.6	
Wednesday	12	30.404	43.3	37.1	N.E.	47.1	53.2	36.9	100.3	34.3	
Thursday ..	13	30.344	44.4	41.7	N.	46.1	53.9	30.9	102.9	30.1	
Friday ..	14	30.405	39.8	36.2	N.	45.0	54.9	32.2	80.1	25.2	
Saturday ..	15	30.255	48.1	43.8	W.	45.3	64.1	34.2	102.2	29.9	
		30.345	44.7	40.8		46.9	58.5	35.2	95.6	32.7	

## REMARKS.

- 9th.—Bright sunny day; a little fog in evening.  
10th.—Almost cloudless throughout.  
11th.—Overcast till 2 P.M.; frequent faint sunshine after.  
12th.—Alternate cloud and sunshine, the cloud rather preponderating.  
13th.—Overcast early, with slight drizzle; generally sunny after 10 A.M.  
14th.—Foggy early; bright sunshine from 10 A.M.  
15th.—Bright sunshine throughout.

Another week of absolute drought, Saturday being the twenty-ninth consecutive day with no measurable fall of rain; a period which is longer than any other in my record, which extends back to 1857. As the rain in the middle of March was quite trifling, we have practically (though not strictly) had no rain for seven weeks, as we must go back to March 1st for a record of a tenth of an inch.—G. J. SIMONS.





"**F**ORTY-THREE days without a drop of rain" is Mr. E. Molyneux's record of the weather at Swanmore, a fact, he goes on to say, "unprecedented in the memory of the oldest inhabitant at this season of the year." It is indeed remarkable, and it would be interesting to know of records, if any, of still longer terms during which not a drop of rain was found in the gauge. This abnormal period of drought is causing many persons to exercise their memories in finding parallels to it in past times. I have no recollection of forty-three consecutive rainless days, but I have a very vivid recollection indeed of what may be termed a fight with drought more serious than Mr. Molyneux has experienced this year.

Memory takes me back twenty-five years, perhaps about the time when your correspondent was learning to spell "Chrysanthemums" preparatory to making cuttings and growing the plants—an art of which he is now a past master. The drought in 1868 that was so exhausting was in summer, and the brunt of it was borne on the limestone ridges in the eastern counties. I have been asked if the spring of that year was a dry one. It was not a wet one by any means. The whole year was dry, the rainfall only being about  $16\frac{1}{2}$  inches, and from the middle of February to the middle of August we had not, speaking from memory, 6 inches of rain. Gardens were, generally speaking, destitute of vegetables, pastures were "burnt up," trees drooping and shedding their leaves, flocks and herds languishing, the harvest completed in July, large tracts of country like a desert, and the "hill tribes" wended their way to the valleys for miles with water carts, which traversed the roads "boot deep" in white dust night and day. Gardeners, farmers, and others who went through the ordeal of that exhausting time will be ardent in their hope that the present abnormal drought is not the precursor of a summer like 1868.

Not having access to my weather records, carefully entered at the time, I have examined those in the *Journal of Horticulture* respecting the London rainfall during the spring of the year named. I find the amounts for February, March, and to the 21st of April 0.81 inch, 0.54 inch, and 0.57 inch respectively, or a total for the three months of 1.92 inch. During that period rain fell on eighteen days, and there was no measurable quantity (less than 0.01) on sixty-two days. How does this compare with the results at Swanmore and elsewhere from February 1st to April 21st this year?

Passing onwards in 1868, let us see what followed the above total of less than 2 inches, from February 1st to April 21st. In the last week of April nearly half an inch fell—0.48 inch. In May the quantity measured was 1.05 inch, June 0.33 inch, and July 1.32 inch—a total for those three months of 2.70 inches. This fell on sixteen days, no rain falling on seventy-five days. What may be described as the drought term of 1868 commenced on February 1st and ended on August 10th, and from the beginning of the year to that date the rainfall was only 5.63 inches, and it would be less rather than more along the east coast. During the whole of that time there were only three good showers—namely, of 0.70 inch the third week in January, 0.90 inch the last week in May, and 0.98 inch the second week in July, and only on one other occasion did the rainfall equal 0.50 inch. During the whole

period of 223 days rain only fell, mostly in very small quantities, on forty-nine days. This collation may be interesting for comparison, and may perhaps induce meteorological observers to look over their records for notable periods of drought, and the effect on vegetation.

In 1868 no serious difficulty was experienced till May. Then it was the earth appeared to be exhausted of its moisture by trees and crops. In my case fortunately two courses had been adopted, and both were found beneficial under the circumstances. Having in view the generally light rainfall of the district and non-retentive soil, all garden crops to which the practice was applicable were sown and planted in hollows, so that water could be conducted to the roots. Heavy supplies were given once a week, mulching being also resorted to. Crops on the level could not be usefully watered, and those in the trenches were kept growing by the applications. The great affinity of salt for moisture was also recognised, in fact demonstrated. In the garden it had been the custom to salt the Asparagus beds freely for years, and the soil was so impregnated with the mineral that weeds could not grow in the beds, but Asparagus did famously. The beds were isolated—that is, at the least 10 yards apart, and other crops grown between them. In the hot weather the salted soil was moist when the spaces between the beds were as dry as a desert. It was also observed that a portion of salt having been unwittingly cast beyond the beds in its application to them had a distinctly beneficial effect on the rows of intercrops nearest the beds. This led to the use of salt generally, and it was applied freely, almost lavishly, in garden, park, and fields, during two years prior to the "big" drought. The land was well charged when this set in, and made the best of what little rain there was, as well as the dew when there was any. The result was very striking—a green park, fields, and garden long after all the land around was parched. Deep culture was the rule where practicable, and hoes by hand and horse kept at work to produce a dusty surface and prevent fissures where mulching could not be done. An inch or two of dust acts like a blanket in arresting evaporation from the earth. By such methods the losses resulting from drought in a memorable year were minimised, and salt played an important part in the work.

The heat during the spring of 1868 did not equal that of the present year, when the maximum readings of the thermometer have been abnormally high, exceeding  $82^{\circ}$  in the shade in several places during the past week. As a result of the high temperature, Horse Chestnuts, Laburnums, Wistarias, Lilacs, and even Hawthorns are in full bloom in the southern suburbs of London. The expansion of the latter in April is a rare occurrence, and the blossoming is more often deferred till June. Weather prophets are apprising us of wet weather in July, August, and September, but their prescience is somewhat discounted by their having omitted to inform us of the present extraordinary heat and drought. Speaking of weather forecasts, I have come across the following narrative in a daily paper, the "Morning," of how they are made:—

"In a lofty building in Victoria Street, London, where not only does the clerk of the weather exist in the flesh, but the weather itself can be seen in all stages of development. Here is what Mr. Gaster, the head of the Forecast and Report Department, had to say concerning the methods by which details regarding the weather are compiled and sent broadcast for the public benefit:—

"All barometrical returns (many of them made from the tops of mountains or very high observatories) are corrected to  $32^{\circ}$  Fahr. and the mean sea level. This system holds good throughout the world, and works very well. The barometer is the most susceptible of instruments, and the most infinitesimal variations in the density of the air will send the mercury "up" or "down." The thermometer is also an important factor in considering weather reports. The Fahrenheit thermometer, which is in use throughout the United Kingdom, is discounted in its usefulness by the meaningless method of counting the degrees. It is purely arbitrary to make  $32^{\circ}$  stand for freezing point and  $212^{\circ}$  for boiling



point. The Reaumur is no better, and is now out of use except in Russia and some parts of Germany. The most practical gauge of temperature is the Centigrade thermometer;  $0^{\circ}$  makes the freezing point, and  $100^{\circ}$  the boiling. Calculations on the decimal system are always easy and satisfactory. A wet bulb thermometer is necessary for showing the amount of moisture in the air.

#### FORECASTS ARE MADE

by comparing the returns of barometrical pressure at the different stations, always taking into consideration the climatic conditions. We then find out whether or no an area of low pressure—commonly called a depression or cyclone—is approaching, and bringing with it rain and squalls. In the summer a depression brings cold and wet; in the winter, as a rule, it is accompanied by muggy damp weather. The winds in this area circulate against the sun. The exact opposite ensues when an anti-cyclone arrives on our shores. In the winter the dead calm of an anti-cyclone induces fog and frost, but in summer it brings heat and clear fine days. In spite of every care, however, and the most minute observations, it is not always easy to forecast the line that one of the areas—more particularly the cyclones—will take.

"As cyclones move so fast, we have a very complete system of issuing storm warnings. A whole coast can be warned in less than an hour. We wire the names of certain centres, and the warning to be issued, to the head telegraph office. They send our message to the towns indicated, and from them again the warning is flashed to all the small stations. Our account with the telegraph department is about £2500 a year. From Norway and Sweden messages are sent free as far as our shores, then we have to pay. From Russia and Turkey we receive reports by letter, as wiring them would be too heavy an expense. We have a Government grant of £14,000 a year, and about 300 subscribers who receive all the reports that we publish. Our reports for the newspapers, which are compiled from the telegrams we receive at 6 P.M., are sent to them gratis.

#### WEATHER RECORDS.

"All documents received by us relating to the weather are most carefully preserved for a long period of years. Weather records are in great demand by agriculturists, by makers of charts, and by the legal profession. At least four or five times a year we are called upon to produce evidence in a court of law concerning weather. In Board of Trade cases proofs are often demanded from us respecting gales or fogs. Farmers often consult us with respect to the past records of their own particular part of the country. A man may drain his fields or change the nature of his crops on the strength of what he hears from us. We also often have inquiries from people who wish to discover a suitable climate for invalid friends. Indeed, there are few walks or incidents in life in which the weather does not at some time or another play a prominent part."

The above information is not uninteresting at the present time. It represents what is being done with the aid of the best appliances, but these do not enable the authorities to indulge in prophetic utterances many hours in advance of expected issues.  
—AN OLD GARDENER.

## ASPARAGUS.

### PLANTING AND SUMMER TREATMENT.

I THINK this delicious edible merits the unenviable distinction of being less generally cultivated than any other vegetable which is so highly esteemed, and yet so easily grown. There is no valid reason why Asparagus should not be as much grown as Green Peas, for it is an undoubted fact that during its season it occupies the same position on some tables as Peas do a few weeks later. But there are tens of thousands who seldom, if ever, taste Asparagus, and many more who do not get half enough. When we look at these facts in a thoughtful manner the question naturally arises, What have been the chief causes which have led to this state of affairs? They may, I think, be traced to complicated methods of culture, and the inherent inclination to plant only sparingly those crops which do not give a full return the first season. Fortunately, we have now found out that splendid results may be obtained by growing Asparagus in a simple and rational manner, and that those crops which give the quickest returns are not always the most satisfactory or profitable either to the professional gardener, the amateur, or the farmer, and each of these classes will do well in the future to extend the space devoted to Asparagus culture, if a beginning has already been made, or to begin at once where it has not yet been attempted.

The soil best suited to this vegetable is a sandy loam, made rich by heavy dressings of well-decayed manure. Soils answering

to this description abound in many parts of the country, and with a fair amount of attention these may be made to produce excellent and profitable crops of Asparagus. No time of the year is more suitable for planting than during the present month, when growth has commenced and the roots are in such a condition as to enable them to work at once into the surrounding soil. When very early planting is practised the natural result of this is that many of the roots die, and others start very weakly.

Assuming that the ground has been recently trenched or double dug and well manured no further preparation will be necessary, but if ordinary digging only has been resorted to a little extra attention ought to be given before planting. A plan which answers admirably is the following. Take out a trench two spits wide, lay the soil on a side, then place 6 inches of thoroughly decayed manure on the bottom of this trench, and dig another spit deep, taking care to thoroughly incorporate the manure with the soil as the work proceeds. Part of the top soil should then be returned to the trench, and be trodden moderately firm, leaving it in the form of a slight ridge along the centre, the top of this ridge being about 4 inches below the ground level. In preparing the trench for planting on ground which has been manured and deeply dug all that is necessary is to take out a trench the width of a spade, leaving a slight ridge in the centre, this also being 4 inches below the ground level; in either case these trenches will then be ready for planting.

Much diversity of opinion exists among cultivators as to the distance apart at which the roots should be set. For ordinary purposes I prefer to have the rows 2 feet apart, the plants being disposed 18 inches from each other. This admits large well-growing clumps to develop good growth, without which fine heads are not obtainable. Where extra large heads are required for exhibition purposes, the clumps should be set 3 feet apart each way. August sown Lettuce may be planted thinly between the rows. Two-year-old clumps of Asparagus are the best for planting. These should be carefully lifted so as to preserve the roots without breakage as much as possible. If not planted immediately after lifting the roots ought to be covered with damp moss or soil, and be given a good soaking with water. It is all-important that this point be attended to, for under such conditions the check attendant upon transplanting is scarcely perceptible, while if it is neglected, partial, if not total failure, will be the result. Before planting a line should be stretched along the centre of the ridge, supporting it at intervals with forked sticks to keep it clear of the soil, so that the crown of the roots may be placed exactly under the line, and the roots be spread out on each side. Especial care should be taken to spread them out to their full length, so as to enable them to work freely among the soil. As the planting proceeds, a little of the finer portions of the soil ought to be placed over the roots with a trowel. As each row is planted and the line removed, the trench should be filled in and the soil made level with a rake, but, except in the case of very light soils, treading should not be done. A thorough watering through a coarse rose ought then to be given, and when the whole is completed, 2 inches of well-rotted manure may with advantage be placed over the whole surface of the bed.

In low damp positions, or on clayey soils, raised beds are necessary. These may be formed by taking out the soil to a depth of 2 feet and stirring the subsoil to render drainage efficient. Over this 9 inches of stubble should be placed, this being covered with a layer of rough manure. Large quantities of burnt refuse, and a fair amount of manure should then be mixed with the soil as it is returned to the bed, bringing it up to 6 inches above the ground level before the ridges are formed for the roots. After these have been placed in position it is a great advantage to cover them with a little soil of a finer nature, such as old potting soil, before finishing off with the natural soil. In clayey soils the crowns should be covered to a depth of 2 inches only. Beds 5 feet in width will accommodate three rows of plants. They should be set 18 inches apart in the rows. Alleys 2 feet in width ought to be provided between the beds, and a strong stake driven into the ground at the corner of each bed.

Should the weather prove dry water must be regularly supplied till the plants are well established. If liquid manure is obtainable an occasional application of it may with advantage be given throughout the summer months; failing this, nitrate of soda applied once a fortnight (in showery weather if possible), at the rate of  $1\frac{1}{2}$  oz. per square yard, or a moderate sprinkling of salt will be found very beneficial. If the young shoots are not cut the year after planting, cutting may commence the following season; but it ought not to be very severe till the third year, and throughout each growing season high feeding must be the order of the day if superior produce is looked for. With these essentials well attended to a bed will continue in full bearing half a century, so that the slight outlay and waiting for a crop at the outset is overwhelmingly repaid. Throughout the growing season



all beds should be kept free from weeds, but the hoe must on no account be utilised to perform the work until growth has become well advanced, otherwise many promising young shoots beneath the soil will be destroyed. Extra strong shoots need supporting with stakes to prevent injury by wind, for the chief aim of the cultivator should be to promote vigorous, healthy growths, and preserve them intact till natural decay takes place. He may then look confidently forward to reap a good harvest of tender young shoots the following spring.

It is not often that growers in this country adopt the practice of earthing up the shoots as soon as they are visible, though they undoubtedly would do if appearance were the only consideration, because by that method long, straight, white stems with short green tips, are produced. These look extremely inviting in the shop windows, but unfortunately only the green part is eatable, but by allowing the heads to grow 3 or 4 inches above the soil, and then cutting the stems at about the same distance beneath, we secure a maximum amount of delicious food, with a minimum length of useless stem. Cutting ought to cease about the end of June each year.—G. W.

#### DECIDUOUS MAGNOLIAS.

ALTHOUGH I fully appreciate the great beauty of these fine shrubs when grown as bushes on the lines indicated by "E. M." (page 315), I must also add that the method of culture there given is not well suited to plants growing in the midlands and the north as to those in the sunny south.

When living in a Kentish garden I often admired several fine plants of *M. conspicua*. The flowers generally escaped injury from frost growing in a mixed shrubbery. I find, however, that the case is quite different at Warwick, for during the last two seasons flowers of this variety have been totally destroyed by frost where left unprotected, although the trees are trained against a very high thick wall, and those branches which protruded the farthest from it suffered the most. I think, therefore, it is much more satisfactory to keep the shoots trained in close enough to receive the full benefit of the protection afforded by the wall than to let them ramble more freely or grow them in shrubberies, and have the flowers destroyed year after year. The plants here are trained to grey sandstone walls, which form a far better background for the flowers than "dull red bricks," though the latter is scarcely a serious objection, for so profuse is the flowering of this *Magnolia* that scarcely any of the background is visible.

The only variety I find suitable for bush culture in this district is *Stellata*, which is a very compact grower, and produces comparatively small but extremely pretty white flowers; these open fully three weeks later than those of *conspicua*, and on that account generally escaped injury from frost. *M. purpurea* *Lenneana* is a very desirable variety to grow, as it bears very large flowers, from 6 to 8 inches across, the colour of the petals being crimson, purple on the outside, and pale pink inside. It flowers a fortnight later than *conspicua*, and is in every respect a grand variety.—H. DUNKIN.

#### APRIL FLOWERING SHRUBS.

I DO not think in gardens generally sufficient use is made of the wealth of flowering trees and shrubs available during the spring months. The rage appears to favour evergreens too much in planting new and renovating old gardens. These are all very well during the winter months, but there is still no reason why a more extended use of the flowering trees and shrubs cannot be made.

The majority of these plants are not fastidious in the matter of soil, many will flourish in that of the poorest character. The main point to observe to attain success is a rational mode of planting them and pruning afterwards. Those of the deciduous order should have what pruning they require done directly the flowering season is past, whereas many persons put this off until the winter or even the spring months, and of course cut away a whole host of flower buds. For instance, who with even an average knowledge of the requirements of hardy shrubs would think of pruning Guelder Roses or even Lilacs during March? Yet we hear of this being done in the usual spring digging of the shrubberies. The main object in pruning flowering trees and shrubs is to preserve some uniformity in shape and to prevent each rambling beyond a prescribed limit, and at the same time to have the growth in such a state of maturity that the fullest amount of flower is obtained from each that is possible.

I have jotted down a list of shrubs that are now in flower here, and this is but a small garden in the extent of shrub accommodation. This list will serve to show what can be done towards beautifying the outside garden during the month of April. *Kerria japonica* fl. pl., *Ghent Azalcas*, *Rhododendrons*, *Berberis Darwinii*, *B. dulcis*, *B. vulgaris*, *B. aquifolium*, Purple Barberry (*B. purpurea*), *Choisya ternata*, *Magnolia purpurea*, *M. Soulangeana*, *Spiræa prunifolia* fl. pl., *Akebia quinata*, *Forsythia viridissima*, *Exochorda grandiflora*, *Amelanchier florida*, *Amygdalus communis*, *A. persica* fl. pl., *Pyrus japonica*, *P. prunifolia* (Siberian Crab), *P. malus baccata*, *P. m. floribunda*, *P. spectabilis rosea*, *Cercis siliquastrum* (Judas Tree), double flowering Cherry, *Lilac vulgaris*, Charles X., Persian, *Lonicera tatarica*, *Erica codonodes*, *Vaccinium*, Yellow Spanish Broom, *Laurustinus*, *Deutzia gracilis*, *Ribes sanguinea*, *Clematis montana*, and *Wistaria sinensis*.—E. MOLYNEUX, *Swanmore*.



ANGRÆCUM SANDERIANUM AND A. CITRATUM.

OF the smaller-flowered section of *Angræcums* the above species should, I think, be found in every collection. When well flowered they are charming, and are much admired. With proper culture they will flower annually. Both may be grown in small teak baskets in fresh sphagnum, some lumps of charcoal, and a little peat fibre, and suspended close to the roof. They enjoy a hot moist atmosphere all the year round. During the growing period they require liberal supplies of water, but greatly reduced during the winter months, and they should be shaded from very bright sunshine.

*A. Sanderianum* has pure white flowers, with a spur 3 inches long, exhaling a powerful fragrance, the peculiarity of which I have often noticed that in the evening twilight it is the most pronounced. *A. citratum* has creamy white flowers, with a short spur, somewhat thickened towards the extremity, regularly set on graceful arching scapes, which are admirably adapted for making ladies' sprays.—W. H. S., *Stourbridge*.

#### CALYPSO BOREALIS.

AMONGST the exhibits before the Orchid Committee of the R.H.S. on March 28th was a basket of British and other Orchids from H. J. Elwes, Esq., Andoversford, amongst the plants being *Calypso borealis*, for which a botanical certificate was awarded. It is not a British plant as some may have thought, nor is it new, having been introduced from North America as far back as 1820. It is extremely distinct and attractive, having a profusion of brownish red flowers, and growing barely 6 inches high. It is a terrestrial Orchid, and does best in sandy loam and peat. Doubt-



FIG. 62.—CALYPSO BOREALIS.

less it could be established in a suitable medium within the shelter of a wall, but it is best grown in a pot and kept in an unheated frame or pit. Fig. 62 represents it.

#### PHAJUS × GRAVESII.

This new hybrid, says a correspondent in the "Garden and Forest," is the result of cross between *Phajus Wallichii* and *P. grandifolius*. The seed was sown July 6th, 1889, came up December 1st, 1890, and bloomed February 12th, 1893. The general habit of growth and shape of spike and flower is that of the seed parent; the flower is 5 inches across; sepals and petals



cinnamon colour, with white reverses; lip pink-rose on front, with a white pencil mark extending to apex, the part enfolding the column white, stained with yellow near the base; column pure white. The name is complimentary to H. Graves, Esq., of Orange, New Jersey.

### STRAWBERRIES FOR FORCING.

For the information of those who have not been successful in growing Strawberries in pots, I will give a few hints which may be useful in future attempts, also to young gardeners. In the first place it is essential to have young beds, I mean beds made the previous summer of strong runners. These will have made strong crowns by the following spring, and will produce the earliest runners.

Layering should commence in May as soon as good runners can be procured. They ought to be placed into 60-size pots, and secured by small pegs, which can always be obtained from old disused brooms. The leader and side runners must be pinched off, so that the whole vigour may be concentrated to the main runners retained. The pots should be stood on pieces of slate, so as to prevent worms getting in the soil. Watering at this stage must be well attended to, or a season's labour will be thrown away should the plants be allowed to become dry and parched. It is an advantage to water with a moderate rose, as the foliage is thus thoroughly wetted, and so kept free from red spider.

When the runners have become root-bound they should be shifted into larger pots; those required for early work, such as Noble, Vicomtesse Hericart de Thury or Keens' Seedling put into 6-inch pots. This will be found to be an advantage when forcing, as the roots are more readily warmed than when placed into larger sizes. The later varieties, such as La Grosse Sucrée, James Veitch, President, or Sir Joseph Paxton (these I have placed in the order of ripening), should be placed in 7-inch pots. Use a compost of one-half decayed turfy loam, quarter leaf soil, and quarter stable manure, not too decomposed, as the strength will be gone, but prepared as if for a Mushroom bed. To this should be added a fair sprinkling of soot, bone dust, and a little lime, the whole being thoroughly mixed and allowed to remain in a heap a month previous to being used. This allows the loam to become impregnated with the various manures.

After being potted the plants should, if possible, be stood in lines on a walk fully exposed to the sun. The runners and weeds must be removed, and watering duly observed. When the pots are full of roots liquid manure should be supplied twice a week; the drainings from the stable form an excellent manure, and can be used mixed with water about the colour of brown brandy. There remains one more serious chance of failure, and this I will explain. When the crown has almost finished its work it will put out at the axil of the leaves other breaks. These should be pinched or rubbed out, for if allowed to remain will form into other crowns, which weaken and draw from the main crown.

Another cause of failure is undue forcing; for instance, it would be absurd to expect Sir Joseph Paxton or President to fruit satisfactorily early in the spring, these being used, as a rule, for the last batch. These varieties will not force as readily as Noble, Vicomtesse Hericart de Thury, or Keens' Seedling. I should strongly recommend those who may not know the merits of each or any individual variety to obtain the advice of someone who is in a position to tell them rather than follow their own ideas.—H. P., *The Knoll Gardens, Wimborne.*

### GARDENERS' ROYAL BENEVOLENT INSTITUTION.

On Friday evening last a very successful meeting was held at the Redland Park Hall, Bristol, for the purpose of advocating the claims of the Gardeners' Royal Benevolent Institution, under the presidency of J. H. Lockley, Esq., late High Sheriff for the county. It was announced that Mr. Harry J. Veitch, Treasurer of the Institution, who had been announced to give an address, was unable to be present through pressure of business.

The Chairman, in his opening remarks, said Mr. Veitch had shown his sympathy with the Society in a practical way, and they had his wishes for a successful meeting. He pointed out the advantages offered by the Society in its provisions for old age pensions. He said he admired the thrifty man who endeavoured to make provision for old age without assistance, although, of course, they knew there were many people who had not really the power to set aside sufficient to procure for them at an advanced stage of life an old age pension. The Gardeners' Institution stepped in and did a good work. The sum of £20 a year, at which old age pensions were fixed, meant 8s. a week, and the majority of societies in Bristol, some of which had been in existence 150 years, rarely apportioned to a man or woman who had reached the eligible age a larger amount than this. If this Society could be induced to open a

branch in Bristol and the neighbourhood, he felt quite sure of this, that by the gardeners themselves showing they had an interest in the Institution, which was established purely for themselves, there would be no lack of outside interest to help them.

Mr. George J. Ingram, Secretary, followed with an exhaustive address on the principles, objects, and needs of the Institution, after which, on the motion of T. Walls, Esq., Town Councillor, seconded by Dr. Shaw, it was unanimously resolved that "An auxiliary of the Gardeners' Royal Benevolent Institution for Bristol, Bath, and neighbourhood be formed, and is hereby inaugurated at this meeting."

Messrs. Webley, Garaway, Vallance, and Parsons also addressed the meeting, and the Chairman consented to become President of the local auxiliary, and announced his intention of becoming a life member and an annual subscriber to its funds. Many other annual subscribers were also announced.

Hearty votes of thanks to Mr. George J. Ingram for his address, and to the Chairman for presiding, brought the meeting to a close.

### SUMMER PRUNING VINES—AN OBJECT LESSON.

MR. STEPHEN CASTLE'S practical and interesting remarks on the above subject in the *Journal of Horticulture* for April 6th (page 281) come at a very opportune time. There can be no two opinions as to the advantage and ultimate good results traceable to the practice of the early disbudding of Vines, removal of superfluous bunches, and the prompt thinning of the berries in those retained for the crop. It is obviously a great mistake to allow superfluous shoots to make inches of growth before being removed from the Vines, or for that matter, from fruit trees of any description, especially Peaches and Nectarines, thereby wasting the forces of the trees, which should from the beginning be directed to the development of the necessary number of growths and leaves, and the building up of strong, healthy, fruitful Vines and trees.

Mr. Castle says that "undoubtedly practice combined with thought leads to success." I may be allowed to supplement this assertion by saying that the sound, thoughtful, and energetic practitioner who is given fairly good accommodation and the means wherewith to carry out his work is sure to succeed in producing results of the best description under ordinary good climatic conditions. The practice that leads to success must be sound, and be thoughtfully and energetically carried out.

Leaving laterals 1 foot apart on each side of rods of the Black Hamburgh Vine, and each lateral having six leaves, as recommended and apparently practised by Mr. Castle, appears to me to be at the least 3 inches too close to allow of due leaf development. Mr. Castle's contention that "a large leaf is far more value than any amount of small foliage or elongated wild growths" is so far good, but I am not at all sure that his method of attaining the end in view is so satisfactory as it should be, seeing that it tends to a crowding of growth and foliage. Would not the individual leaves and the buds in the axils of same be larger and of better texture, and more thoroughly ripened, were the sub-laterals pushing from the base of the said leaves along the main laterals pinched clean out of all Vines as soon as they appear, the same as Mr. Castle serves his Muscats?

In the case of young Vines intended for fruiting the year after they are raised from eyes and planted out, I always pinch the laterals as soon as they appear, stopping the individual Vines when about 3 feet high, pinching out the lateral growth resulting from this stopping in the axil of the top leaf later on. This, after an interval of about ten days, will cause the bud in the axil of the leaf, and which would otherwise have remained dormant until the following year, to push into growth. Meanwhile, the check thus given to top growth, the flow of sap is directed to thickening of the Vine below, and the plumping of the eyes or buds located in the axils of the leaves, as well as the enlargement of the latter, the operation being repeated after a fresh growth of 2 feet in length is made, and so on until the desired length of rod is attained. Thus treated a uniform thickness of rod and plumpness of buds are secured, and speaking from experience of this and other methods of procedure I give a decided preference to the system described above for permanent as well as supernumerary Vines. Our aim should always be to avoid as much as possible wasting the forces of Vines, or fruit trees in general, by allowing them to produce and mature wood which we know very well must be removed with the pruning knife at the fall of the leaf—that is allowing a Vine or tree to produce and ripen more wood and foliage than is absolutely necessary for the permanent welfare of the same.

It is generally assumed that the restriction of top growth favours the production of fibrous roots—that is, that the slight check given to top growth by stopping and pinching of the shoots is communicated to the roots, and that following this slight check fresh and additional roots are emitted from the side of those whose growth had been slightly interrupted. But is this really so? Much good may be done by raising the question.—H. W. WARD.

ANYTHING in connection with Vines is always interesting to me, and I have read all that has been written on summer pruning or pinching Vines. In my first lesson on pinching Vines I was told to pinch the lateral when it made two leaves beyond the first bunch, and stop the sub-laterals at the first leaf; and as I was anxious to keep forward with my work, I stopped the laterals as soon as I could perceive the second leaf when in a very small state, but that was too soon for my



employer, as he wanted them to grow about 6 inches beyond the second leaf before being pinched back to it.

The above treatment I still consider sound for old or weakly Vines, but I would take most of the sub-laterals off when the Grapes begin colouring. With younger Vines I have found that by stopping them one leaf beyond the bunch, and doing so as soon as the leaf can be seen, and when it is only about the size of a shilling, that the bunches come larger than when they are allowed to extend much farther before doing so. I also pull off all sub-laterals excepting one at the point and two at the base as soon I can get hold of them. The one at the point is stopped at the first leaf when it can be done; the two at the base are allowed to make two or three leaves before being stopped to the first leaf. The idea of allowing these to grow more than the others before being stopped is that it strengthens the buds at the base, which is of greater importance, as it is from these buds the next season fruit comes from. But these sub-laterals at the base are removed entirely as soon as the fruit is ripe.

Although this close stopping is beneficial I would caution young gardeners and amateurs not to stop so closely, as there is a danger of forcing the buds that should lie dormant till the following year. During the time the Grapes are stoning I allow the sub-lateral at the point to extend, but it is stopped as soon as the second swelling commences, and they are allowed to grow again after the fruit is ripe.—J. L. B.

## ROYAL HORTICULTURAL SOCIETY.

APRIL 25TH.

THE Drill Hall on this occasion presented a gay appearance. Orchids were fairly well represented, as also were greenhouse and stove plants. Hardy plants, however, formed the bulk of the exhibits. Auriculas and Primulas were extensively staged, this being the annual exhibition of the National Auricula and Primula Society.

**FRUIT COMMITTEE.**—Present: P. Crowley, Esq. (in the chair), with Rev. W. Wilks, Messrs. H. J. Pearson, Peter Veitch, Harrison Weir, G. Taber, J. T. Saltmarsh, A. Dean, G. Sage, G. Wythes, J. Hudson, H. Balderson, F. Q. Lane, J. Willard, J. Smith, G. W. Cummins, A. Moss, and J. Wright.

Mr. J. Smith, gardener to W. R. Inglis, Esq., Reigate Hill, sent a scarlet-flesh Melon, Hamilton's Defiance, a variety of promise, but not quite ripe, and the Committee requested to see it again. Six seedling Melons, the result of a cross between the Countess and Royal Ascot, were sent from the Royal Gardens, Windsor. Medium sized slightly netted fruits with a greenish white flesh, tender, sweet and juicy. A box of Strawberries, La Grosse Sucrée, very large well coloured fruits from the same gardens, merited the cultural commendation awarded.

Mr. C. E. Munday, gardener to W. A. Wykeham Musgrave, Esq., Thame Park, sent a dish of Strawberries, Walker's Early Prolific, for certificate. The fruits were much like President, and the Committee thought the variety should be tried at Chiswick. Mr. J. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, sent fruits of the white Bieton Pine Strawberry, which were conspicuously mixed with Keen's Seedling and others (vote of thanks). Messrs. James Veitch & Sons exhibited dishes of Gunton Park, Lord Suffield, and Empress of India Strawberries, fine fruits of promising varieties which have been previously certificated (vote of thanks).

Mr. G. Wythes sent fruits of Amsden June Peach, from a tree planted in December, 1890. From this tree seven dozen fruits were gathered in May, 1892, and nine dozen in April, 1893, the first ripening April 12th. The award of merit granted to Mr. Wythes for this Peach in 1892, as an early variety, was confirmed. It is a clingstone Peach. Mr. Wythes also sent clean uniform tubers of Sharpe's Victor Potato, grown in nine weeks. An award of merit was granted for it as a forcing variety of proved usefulness. Mr. J. G. Dean, The Gardens, Titsey Place, Limsfield, sent eighteen varieties of Apples, most of them firm, and a vote of thanks was unanimously accorded.

**FLORAL COMMITTEE.**—Present: Mr. G. Paul (in the chair), and Messrs. H. Correvo, H. Herbst, H. B. May, G. Stevens, G. Gordon, J. Jennings, C. E. Pearson, W. Furze, C. E. Shea, J. D. Pawle, P. Barr, T. Baines, C. Noble, J. Walker, J. Fraser, and W. Watson.

Roses formed an interesting feature. Mr. W. Rumsey, Joynings Nursery, Waltham Cross, sent a group of Tea and Hybrid Perpetual varieties in pots. The flowers were fresh and exceedingly bright. Mr. Rumsey also had a box of Niphotos blooms, and another of mixed Roses, amongst which Ethel Brownlow, Senateur Vaisse, Charles Lefebvre, and Marie Finger were particularly fresh (silver Flora medal). Messrs. W. Paul & Son, Waltham Cross, had a splendid collection of trained Roses, which included the strong growing Moss Zenobia, and many of the best Hybrid Perpetuals. Jennie Dickson, a Hybrid Tea, was also well shown in this collection (silver-gilt Flora medal). Messrs. G. Paul & Son, Cheshunt, sent pot Roses, and a number of hardy flowers in pots. Amongst the latter were Phlox canadensis, Iris pumila aurea, Anemone Robinsonianum, and Adonis vernalis (silver Banksian medal). J. C. Tasker, Esq., Middleton Hall, Brentwood (gardener, Mr. Perry), also had some well grown Roses; and Mr. Walker, Thame, sent three boxes of Maréchal Niel, and a box of Zonal Pelargoniums (silver Banksian medal). The cut Roses sent by Mr. Frank Cant, Colchester, were remarkably fine, and attracted much attention (silver Banksian medal); and the three boxes of Maréchal Niels and a box of Pansy sprays sent by Mr. A. Smith, Prospect House, Downley, High Wycombe, were accorded a vote of thanks.

Messrs. P. Barr & Sons, Long Ditton, sent a representative collection of Nareissi and other hardy flowers (silver Banksian medal). Messrs. E. D. Shuttleworth & Co., Albert Nursery, Peckham Rye, sent hardy plants in pots and cut Narcissi blooms (bronze Banksian medal). Messrs. J. R. Pearson & Sons, Chilwell, also had an interesting group of Nareissi, amongst which the comparatively new Madame De Graaf was well represented (bronze Banksian medal). Mr. G. H. Cammell, Brookfield, Heathersage, Sheffield, won the first prize for a collection of Daffodils.

Caleolarias were shown in good condition by Messrs. J. James and Son, Farnham Royal, Slough, the flowers being large and well coloured (silver Banksian medal). Mr. T. Bullen, Hithergreen, Lewisham, sent a dwarf-growing Cape Calla, with a bright yellow spathe, for naming, also some with cream-coloured spathes. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, had a collection of Primula Sieboldi in variety, the best being Ruby Queen, Magenta Queen, Ruby, Novelty, and Admiration (bronze Banksian medal). Messrs. J. Peed and Sons, Roupell Park Nurseries, S.E., sent a large collection of Gloxinias tastefully arranged with Adiantum cuneatum (bronze Banksian medal). Messrs. W. Cutbush & Sons, Highgate, were represented by Calla Little Gem, and various hardwooded plants (vote of thanks). Messrs. B. S. Williams & Sons had Abutilon Souvenir de Bonn, for which an award of merit was adjudged. This is described elsewhere. The same firm staged Calla aurata and a distinct Epiphyllum named E. truncatum Russellianum Gartneri, and a group of miscellaneous plants (silver Banksian medal). Messrs. J. Veitch & Sons had small plants of the new Strobilanthes Dyerianus. A first-class certificate was awarded for this novelty, which is described elsewhere. The Guildford Hardy Plant Nursery Co., sent four baskets of Alpine plants, which included many choice species (silver Banksian medal). Some hardy Primroses were staged by Mr. R. Dean, Ealing.

Mr. H. Knowles, Horsell Nursery, Woking, sent two boxes of Daphne cneorum majus, a dwarf growing sweet scented form (vote of thanks). Messrs. B. S. Williams, in addition to the above mentioned exhibits, staged a group of Palms, Amaryllises, and other plants (silver Banksian medal). Messrs. E. D. Shuttleworth & Co. also sent a collection of miscellaneous stove plants and Orchids, all tastefully arranged (silver Banksian medal). Dr. Walker exhibited some new flower supports made of wire. Messrs. H. Lane & Son, Berkhamstead, sent some charming varieties of hardy Azaleas, the best being A. Raphael de Smet and Hilda. Awards of merit were accorded these, and they are described elsewhere. C. E. Smith, Esq., Silvermere, Cobham, staged some well grown Deutzias, for which a vote of thanks was accorded, and J. C. Tasker, Esq., staged a collection of Cannas, for which a bronze medal was recommended.

**ORCHID COMMITTEE.**—Present: H. Veitch, Esq. (in the chair), and Messrs. James O'Brien, S. Courtauld, T. B. Heywood, F. Sander, J. Jacques, E. Hill, W. H. White, R. B. White, A. H. Smee, C. Pitcher, H. Ballantine, H. M. Pollett, and J. Douglas.

A few good collections of Orchids were staged. Messrs. F. Sander and Co., St. Albans, sent an interesting contribution, well arranged and containing some choice things. Amongst these Cypripedium Goweri, C. Robinsonianum, Oneidium Roraimensis, Pescatorea Klabochozum, Cattleya Skinneri alba, Odontoglossum Roeblingianum (award of merit), Lælia Digbyana, and Dendrobium macrophyllum were specially good (silver Banksian medal). Messrs. W. L. Lewis & Co., Southgate, also staged a collection of exceptional merit. This contribution contained a charming little Cypripedium named Rajah Brooke, the spike carrying three flowers. Maxillaria Harrisoniae, Odontoglossum eitrosium roseum, Cattleya Skinneri, and Lælia purpurata were also noteworthy. W. W. Mann, Esq., Ravenswood, Bexley, sent a fine plant of Cyenoches pentadactylon; and Thomas Statter, Esq., Stand Hall, Manchester (gardener, Mr. R. Johnson), staged Cypripedium Measuresianum aureum, a brownish yellow variety. A fine specimen of C. Boxalli superbum and a piece of Dendrobium nobile (Statter's var.) came from the same source.

Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, sent a small but attractive group, amongst which Cypripedium Schröderae, C. villosum aureum, Cattleya Mendeli, and C. Schröderae were particularly noteworthy. Some Masdevallias, described elsewhere, were adjudged first-class certificates (silver Flora medal). G. Wigley, Esq., Dukenfield, Cheshire (gardener, Mr. C. Harris), sent a number of specimens; and C. E. Goodhart, Esq., Beekenhamp (gardener, Mr. W. R. Padbury), staged Cypripedium Walli in good condition. A botanical certificate was awarded for Saccolabium eerinum, which came from the Royal Botanic Gardens, Glasnevin. J. G. Lutwyche, Esq., Oakfield, Beckenham (gardener, Mr. J. A. May), sent Cattleya speciosissima Coureri; and Mr. J. Fitt, The Gardens, Panshanger, staged Odontoglossum Fittianum (var.?), Cypripedium Crossianum, and others.

Some grand varieties of Odontoglossum crispum came from De Barri Crawshaw, Esq., Rosefield, Sevenoaks (gardener, Mr. S. Cooke); and Messrs. Condor & Raphael, King's Langley, Herts, sent three plants of the pretty Cypripedium niveum and other things. Messrs. Hugh Low and Co., Clapton, staged an interesting group, and among these Stanhopea Amesiana (award of merit), Cypripedium bellatum, C. Masterianum, Odontoglossums, and Oncidiums of sorts were conspicuous. Messrs. J. Veitch & Sons sent Lælio-Cattleya Aseania (Lælia xanthina × Cattleya Trianae) and Lælia Latona (L. purpurata × L. einnabarina), two exceedingly interesting hybrids. The first-named is described below. Mr. C. Winn, Selby Hill, Birmingham, had Dendrobium Nestor (D. Parishii × D. superbum); and Mr. W. Whiteley, Hillingdon, sent



*Odontoglossum excellens*, Whiteley variety. Messrs. B. S. Williams and Son had *Vanda teres Andersoni*, and *Diacrium bicornutum*, amongst other things.

#### CERTIFICATES AND AWARDS.

*Strobilanthes Dyerianus* (J. Veitch & Sons).—This is a beautiful foliaged plant, resembling some of *Bertolonias* so far as the colouring of leaves is concerned. The leaves are oblong, acuminate, and on the plants exhibited, which were small, were from 3 to 4 inches in length. The surface of the foliage is rosy lilac, relieved by prominent green veins. A valuable stove plant (first-class certificate).

*Lælio-Cattleya Ascania* (J. Veitch & Sons).—This is an interesting bigeneric hybrid, being the result of a cross between *Lælia xanthina* and *Cattleya Trianae*. The sepals and petals are pale yellow, the lip being a richer shade, with a rich purplish magenta tip (first-class certificate).

*Abutilon Souvenir de Bonn* (B. S. Williams & Son).—A pretty foliaged *Abutilon*, the leaves being of a rich green centre, with a white margin (award of merit).

*Azalea Hilda* (H. Lane & Son).—This is a most attractive variety. The flowers are borne in large trusses, and are of a bright orange shade (award of merit).

*Azalea Raphael de Smet* (H. Lane & Son).—A pretty semi-double variety with medium-sized blush flowers, suffused and edged with pink (award of merit).

*Stanhopea Amesiana* (Hugh Low & Co.).—This is a charming species with large sweet-scented flowers. The sepals and petals are cream, while the lip is white glazed like china, slightly spotted with brown in the centre (award of merit).

*Masdevallia Gelengiana* (Sir Trevor Lawrence).—A small growing interesting species. The flowers are pretty though not attractive, being of a dull cream shaded green, and covered with minute crimson dots (first-class certificate).

*Masdevallia Armini* (Sir Trevor Lawrence).—This a pretty dwarf growing species. The flowers are small, of a purplish magenta shade with a lemon throat, and greenish yellow tails (first-class certificate).

*Epidendrum macrochilum album* (Sir Trevor Lawrence).—The sepals and petals of this form are of a dull bronzy green shade, the lip being white with a magenta blotch. The specimen shown had seven spikes, with three to four flowers on each (award of merit).

*Odontoglossum Reeblingianum* (F. Sander & Co.).—An attractive species; the sepals and petals are cream, densely spotted with chocolate, as also is the lip; the throat is lemon yellow, and spotted brown (award of merit).

*Maxillaria Sanderiana*, var. *xanthoglossa* (F. Sander & Co.).—This is an exceedingly showy variety. The petals and sepals are white, densely spotted with crimson, deepening to a dull reddish shade in the centre of the flower. The tip of the lip is fimbriated, and a pale yellow shade (award of merit).

#### ALPINE FLOWERS.

The paper on these plants, written by Mons. H. Correvon for the afternoon meeting at the Drill Hall, was read by the Rev. W. Wilks, Sir John Llewelyn, Bart., occupying the chair.

The essayist treated the subject in an excellent and exhaustive manner. It was pointed out how almost all the plants growing on the side of the Alps at a high altitude were dwarf and stunted, forming dense carpets of leaves and a great number of flowers, which were practically stemless. This was the case even with plants which on the plains were grown as shrubs. The essayist said how much different were the true Alpine plants when growing in England and when in their native habitats. Often when seeing the plants in the rockery at Kew and in the garden of G. F. Wilson, Esq., at Weybridge, he had been astonished at the fine growth which they had made, and which demonstrated plainly how eminently suited was the climate of England to their requirements. But if we in England had the advantages in many ways they in Switzerland had them in others.

The propagation of the plants was, said the essayist, a matter of peculiar importance, as owing to so many visitors going to the mountains and some of them taking roots of the plants which were at the time of the visit in flower, many species and varieties were rapidly becoming extinct, whereas if they would but make use of seeds to procure a stock no such misfortune would happen. Though occasionally some of the seeds were a long while in germinating, it was an undoubted fact that plants raised in this manner flowered more profusely, were more robust in habit, and far harder than those obtained from cuttings or division of the roots. This, the essayist remarked, was an excellent reason why plants should be raised from seeds, which were in the majority of cases readily procurable. The three great essentials to health with Alpine plants were warmth, light and moisture, and these were to be had in Switzerland, the two former from the sun and the latter from the ground, coming from it in the form of a dense vapour, which while supplying moisture to the leaves, at the same time protected them from the otherwise too powerful rays of the sun. The flower buds of the plants were formed mainly in the autumn, and were thus ready to burst into bloom on the first disappearance of the snow during the following year. The adaptability of walls for the cultivation of great numbers of the Alpine plants was also most intelligently treated, and growers were advised to try them in this manner, even when they had failed to achieve success when giving the plants a rich soil in which to grow.

A few questions were asked by members of the audience (an unusually large one) to which Mons. Correvon answered in an

eminently satisfactory manner, making himself readily understood by his good English.

A hearty vote of thanks was accorded to Mons. Correvon for his admirable paper, to the Rev. W. Wilks for reading it, and to Sir John Llewelyn for presiding.

#### NATIONAL AURICULA AND PRIMULA SOCIETY.

APRIL 25TH.

THE annual Exhibition of this Society was held at the Drill Hall, James Street, S.W., on Tuesday, in connection with the meeting of the Royal Horticultural Society. Owing to the prolonged spell of drought and abnormal heat some difficulty had apparently been experienced in retarding the blooms, many of which had lost their freshness. Still the exhibits were fairly good although a little below the usual standard. Appended are the names of the prizewinners in the various classes.

The Rev. F. D. Horner, Burton-in-Lonsdale, Kirkby Lonsdale, was awarded the first prize for twelve Show Auriculas in distinct varieties. This exhibit was composed of *Doris*, *Achilles*, *Charmer*, *Dusk*, *Alexander Meiklejohn*, *Magpie*, *Green Linnet*, *Shirley Hibberd*, *Monarch*, *George Lightbody*, *Heatherbell*, and *Chloë*. The plants were excellently grown, the flowers being of fine form, and the trusses large and compact. Mr. T. E. Henwood, Hamilton Road, Reading, was accorded second prize for a very fine exhibit; and Mr. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, third.

In the class for six distinct varieties the Rev. F. D. Horner was again first with fine examples of *Grayling*, *Alexander Meiklejohn*, *Rev. F. D. Horner*, *Ladybird*, *Magpie*, and *Dusk*. Mr. Henwood was second, whose exhibit, though good, did not have the substance of Mr. Horner's. Mr. Sanders was third, Mr. Douglas fourth, and Mr. Jas. Weston fifth. W. Smith, Esq., The Links, Bishops Stortford, was accorded the first prize for four distinct varieties, staging fine plants of Mrs. Dodwell, *Rev. F. D. Horner*, *Mrs. A. Potts*, and *Geo. Lightbody*. Mr. Leonard Brown, Brentford, was second; and Mr. Patterson, Ashburn, Sunderland, third. In the class for two distinct varieties Mr. Leonard Brown was first with *Mrs. Dodwell* and *Rachel*; W. Smith, Esq., being second with two charming plants; Mr. C. Phillips, Hamilton Road, Reading, third; and Mr. Patterson fourth.

For a single specimen plant, the Rev. F. D. Horner was first, staging his namesake, and third with *Attraction*; Mr. Henwood second with a good plant, and fifth; W. Smith, Esq., fourth; Mr. C. Phillips, sixth; Mr. Patterson, seventh and eighth. *Rev. F. D. Horner* was first in the class for a grey edged specimen, staging *Geo. Lightbody*; Mr. Henwood second with a fine plant of *Lancashire Hero*, and third; W. Smith, Esq., fourth; Mr. Patterson, fifth; Mr. Douglas, sixth and seventh. In the class for a single white edged specimen, the Rev. F. D. Horner was first and second with *Magpie*, the plants being very fine; Mr. Henwood was third and fourth with charming examples of *Mrs. Dodwell*; W. Smith, Esq., was fifth; Mr. Sanders, sixth; Mr. Patterson, seventh and eighth. In the class for a single specimen, self, W. Smith, Esq., was first and second with *Black Bess*; Mr. Henwood third and fifth with Mr. A. Potts; *Rev. F. D. Horner*, fourth; Mr. Douglas, sixth and seventh.

For fifty Auriculas of not less than twenty varieties, which could include Alpines, Mr. Chas. Turner, Royal Nurseries, Slough, was first with a grand exhibit, prominent in which were *Winifred (Alpine)*, *Rev. F. D. Horner (green edge)*, *Dora (Alpine)*, *Mr. H. E. Milner (Alpine)*, *Mrs. A. Potts (self)*, *Chas. Phillips (Alpine)*, and *Patience (Alpine)*. Mr. Douglas was awarded the second prize with a very creditable exhibit. Mr. W. L. Walker, Reading, being third.

Mr. Chas. Turner was first in the class for twelve distinct Alpines, staging grand plants of *Fred Knighton*, *Winifred*, *Roland*, *Mrs. Harry Turner*, *Dash*, *Countess*, *Patience*, *Hubert*, *Hotspur*, and three very fine unnamed seedlings. Mr. Phillips was second with a very good group, Mr. Douglas third, Mr. W. L. Walker fourth, and Mr. Sanders fifth. Mr. Phillips was awarded the first prize for six Alpines, distinct varieties, showing *Mrs. F. Barrett*, *Mrs. G. W. Palmer*, *Baroness Burdett Coutts*, *Mr. F. J. Blandy*, *Mrs. Martin*, and *Saturn* all in good condition. Mr. Turner was second, Mr. Douglas third, Mr. Walker fourth, and Mr. Sanders fifth. Mr. Patterson was first for four distinct varieties of Alpines, staging *Diadem*, *King of the Belgians*, *Mrs. Dodwell*, and *Phillip Frost*. In the class for a single specimen Alpine Auricula with a gold centre was given to Mr. Chas. Turner with *H. M. Pollett*; Mr. Phillips was second and fourth; Mr. Douglas third; Mrs. Blackett Gill, The Stone House, Caterham, fifth. Mr. C. Turner was again first in the class for a single specimen plant with a white centre, showing *Lady Laura Hampton*, and was also second with *Winifred*; Mr. Sanders was third, Mr. Douglas being fourth and fifth.

For six gold laced Polyanthus, dissimilar, Mr. J. Weston was first with charming plants of *George IV.*, *Napoleon*, *John Bright*, *Lancashire Hero*, *Cheshire Favourite*, and *Lancer*. Mr. R. Dean, Ranelagh Road, Ealing, was second. Mr. Sanders was first for three plants of gold laced Polyanthus in distinct varieties, showing *William IV.*, *John Bright*, and *Napoleon III.* in good form. Mr. J. Weston was awarded the second prize. Mr. Patterson was accorded the first prize for a single specimen gold laced Polyanthus, showing a good plant of *George IV.*; Mr. Sanders being second, and Mr. Weston third and fourth.

In the class for twelve Fancy Auriculas Mr. Douglas was first with a charming exhibit, and Mr. Weston second. For twelve Fancy Polyanthus, in distinct varieties, Mr. Douglas was again first with magnificent plants, and Mr. R. Dean second. For twelve single Primroses, in



distinct varieties, Mr. Douglas was first with grand plants, and Mr. R. Dean second.

The Guildford Hardy Plant Nursery, Mill Mead, Guildford, was awarded the first prize in this class for twelve Primulas, showing amongst others *P. intermedia*, *P. rosea* var. *grandiflora*, *P. ciliata*, and *japonica alba* and *P. formosa*.

In the class for seedlings of the Show section Mr. Sanders was awarded the first prize for a grand variety named Engineer, a very dark self of rich velvety colour with a white paste. This variety will be an acquisition. In the class for Alpine seedlings with white centre, Mr. Chas. Turner was first with Winifred, Mr. Walker being second for an Alpine seedling with a gold centre. Mr. Turner was again first for a plant with a white centre, showing Fred Knighton.

The premier Auricula in the Show was a plant of Shirley Hibberd (green edge), exhibited by the Rev. F. D. Horner. It had a grand truss of eleven flowers.

Mr. Douglas was awarded the first prize for a charming group of Primulas and Auriculas, some very fine plants of each comprising the exhibit. Mr. R. Dean staged a number of hardy Primroses in pots, and Mr. Douglas two hampers of Primroses.



**THE WEATHER IN LONDON.**—The past week has again been characterised by bright sunny weather. During the day the heat has been abnormal, whilst the nights were quite warm. At the time of going to press there is no appearance of a change. Crops are greatly in need of rain.

— **WEATHER IN THE NORTH.**—The rain on the afternoon and evening of the 18th was followed by three exceptionally fine days, during which vegetation made great progress. A cold N.E. wind has generally prevailed for the last three days, causing the evenings to be chilly, although the days have been bright and fine throughout.—B. D., *S. Perthshire*.

— **EARLY ROSES.**—Mr. G. Fulford, The Gardens, Trafalgar, Salisbury, sends us Roses gathered in the open air—namely, *Maréchal Niel*, *Lady M. Fitzwilliam*, *Alba Rosea*, *Niphetos*, *Catherine Mermet*, and *Madame Willermoz*. They are very good.

— **ROYAL NATIONAL TULIP SOCIETY.**—We are informed that the next Exhibition of the Royal National Tulip Society will be held at the Botanical Gardens, Manchester, on May 23rd. Entries may be made up to May 15th.

— **THE ROYAL GARDENERS' ORPHAN FUND.**—The annual dinner of the supporters of the Royal Gardeners' Orphan Fund was held last night (Wednesday) at St. James' Hall, Regent Street, W. Baron Ferdinand de Rothschild, M.P., occupied the chair, and he was supported by a large and influential company. The chief speakers besides the Chairman were Sir John Llewelyn, Bart., Sir Trevor Lawrence, Bart., N. N. Sherwood and Arnold-Forster, Esqs. As these pages were passing through the Press at the time the dinner was taking place a full report must be deferred till our next issue.

— **PEAR PROSPECTS.**—We hear from various sources that though Apple blossom is setting well, that of Pears is leaving little or no fruit behind it. The flowers expanded freely, but sharp frosts occurring at the time destroyed the essential organs, and as a consequence there will be many fruitless trees, from which good crops of Pears were expected. At the same time we hear of full sets of Pears on wall trees, protected by glass coping or other form of shelter. We hope, however, that the failure of the Pear crop will not be general on unprotected trees. Perhaps correspondents will favour with observations on the subject of the promise of fruit.

— **MISS ORMEROD'S FIRST HOME.**—A slight error occurred in the citation on page 311 last week. The birthplace of this lady was not Chepstow Park, Sudbury, but Sedbury Park, Chepstow. Her father's property extended about a mile along the Wye and a mile along the Severn, the land between forming an unique hunting ground for the ardent naturalist.

— **CUMBERLAND MAGISTRACY.**—We observe in the list of new County Magistrates for Cumberland the name of Mr. James Watt (Little and Ballantine), nurseryman, Carlisle, who has for several years been a Justice of the Peace for the city of Carlisle.

— **MR. DODWELL** writes from Stanley Road, Oxford :—"Will you kindly allow me in your column for personalia, on behalf of my wife and myself, to return our most grateful thanks to our many friends for their congratulations and gracious sympathy on the occasion of our golden wedding? Very devoutly we thank them and thank God for this pleasant sunlight of our evening days, and we hope we shall be permitted to have the joy of personally tendering our thanks to a large company on August 1st (will they kindly note the date?) the day appointed for our annual Carnation feast."

— **A FINE ADIANTUM FARLEYENSE.**—A grand specimen of this Fern is at the present time growing in the garden of C. H. Gatty, Esq., the owner of Felbridge Place, East Grinstead. This plant, under the care of the gardener, Mr. Jupp, has developed during the past three years into one of the finest and healthiest to be found in England. It is fully 8 feet in diameter, faultless in colour and symmetry of form, the fronds overlapping each other in that graceful and enchanting style so well known in this variety. There are many noteworthy specimens at Felbridge Place, especially *Conifers*. I hope to see these fully described in the *Journal* shortly.—F. D.

— **CHRISTMAS ROSES AND LIQUID MANURE.**—Those who are not in the habit of drenching thoroughly several times during the growing season of these plants with liquid manure I would advise them to lose no time, but to try its effect on *Hellebores*. I make a practice of supplying a fair quantity to the roots, out of doors, at a time when the crops of new leaves are being made, but this year I have given more owing to the weather being especially hot and dry for the last month. The extra luxuriant growth as compared to former years is a sufficient proof that the treatment is correct, as I have found out the crop of blossoms is regulated very much by the amount of growth made.—E. M.

— **LILIUM HARRISII.**—"W. S." observes :—"Some of the best plants of this popular Lily came under my notice recently that I ever remember witnessing in small pots before in the gardens at Heywood, Lord Justice Lopes' residence near Westbury, Wilts. At the time of my visit they stood about 5 feet in height, the stems exceedingly massive and the foliage large and healthy, although only occupying 7-inch pots. From seven to ten bloom buds were showing in the crown of each, which in flower will be very striking and useful conservatory plants. They are growing in a turfy mixture of soil, and obtain assistance from Thomson's Vine manure, which Mr. Robinson, the gardener, holds in very high favour as a plant food. That their cultural attention has been of the best is reflected in the condition of the plants in every detail, and not only does this apply to the plants under notice but in everything cultivated under glass."

— **STRAWBERRIES**, among other things, remarks the same correspondent, call for especial mention, and this will be more perfectly understood when it is said that the majority of the fruits of *President*—a favourite midseason sort at Heywood—weighs an ounce and upwards each. The fruits when set are reduced to nine on each pot, choosing of course those best placed and perfectly set. Sufficient plants are grown to maintain a constant supply from early in March till they are ready for gathering outdoors.

— **A NEW INDUSTRY IN PERTH.**—On Monday we had the opportunity of inspecting a new and quite a novel industry in the neighbourhood of Perth, already being conducted on a large scale, and which promises further development. It owes its origin to the enterprise of Mr. A. L. Rupe, Sunnybank, who, in November last, leased the market garden at Pitheavlis Orchard, Cherrybank. In addition to the ordinary market gardening business, he conceived the idea, owing to the large demand for Mushrooms, of cultivating this esculent fungus upon a large scale. Although Mr. Rupe only took possession in November last, he has already about 700 yards of Mushroom beds laid down, half of which is now in full bearing. For a short time early on Monday morning we watched the operation of picking, and were astonished to find that 1½ cwt. was speedily ready to be packed for Manchester alone, in time to catch the midday train, the most of them being fine, fleshy specimens. Mr. Rupe is under contract to maintain a regular supply all the year round.—(*Perthshire Constitutional*.)



— **DESTROYING INSECTS AT TODDINGTON.**—Further experiments with the Stott appliances were conducted at Toddington on Saturday last, and we are informed they were in all respects satisfactory. A large number of fruit growers assembled on the occasion.

— **SPRING FLOWERS IN HYDE PARK.**—The spring bulbs in Hyde Park have been flowering magnificently, but many of them are now rather past their prime. This, at any rate, is the case on the eastern side of the Park. The Narcissi are gone, and so are the Hyacinths. Many of them, indeed, have been already cleared away to make room for summer bedding plants. "Not for ten years," says Mr. Browne, the Park Superintendent, "have our bulbs been so forward as they are this year. Ten years ago they were past their best by the 7th of April, but we have never had them so forward since."

— **THE YOUNG GARDENERS OF FALKIRK AND THEIR HALF-HOLIDAY.**—If the head gardener who does not appear in favour of a half-holiday for his assistant gardeners lives within the radius that is embraced by the Falkirk and District Association, he would see by the circular sent out by the Association that he would not be required to do the necessary work, as the circular suggested that one of the assistants be left on duty to attend to airing and watering, or any necessary work. I hope he will now do all in his power to assist in furthering the Improvement Association, as he thinks it is time one was formed in Falkirk, if he can see his way to do so. Since my last letter another of the leading proprietors in the district has granted the half-holiday, and I hope it will not be long before all assistant gardeners will enjoy the same benefit.—A. G.

— **SATURDAY HALF-HOLIDAY.**—As gardeners have to keep up with the times in their work, it is not surprising they should also want to do likewise as regards holidays. For several years our men have left off at four o'clock on Saturdays; but this is too early in the middle of summer for closing many of the houses. What do the young men intend to do with the houses when they leave off at dinner time?—shut them up or leave them open till Monday? As Saturday is the busiest day, if they are to have a holiday, why not have it in the middle of the week or once a fortnight? Then half of the men could go each week, or a whole season's growth may be destroyed by one of these half-holidays.—J. L. B.

— **WEATHER REPORTS.**—I have great pleasure in replying to Mr. Easter's questions on page 315, but am not certain that I understand them rightly, unless the word "grass" has by some means been substituted for grass. The thermometers here are hung in a Stevenson screen at 4 feet above the surface of the ground. They have been tested and certificated at Kew, and are periodically examined as to their correctness by an officer of the Meteorological Society, who visits the principal stations for the purpose. All the mean maximum and minimum observations sent by me to the Journal are taken from these two thermometers, also the mean temperature of the various months. The grass thermometer is placed in a position fully exposed to the sky near to the Stevenson screen. It rests on a piece of turf, and the word "grass" is always added to all observations recorded from this instrument.—W. H. DIVERS, *Ketton Hall Gardens, Stamford.*

— **AWARDS FOR ENGLISH EXHIBITS AT GHENT.**—At the Ghent Quinquennial Show last week Messrs. Foster & Pearson, Limited, were awarded first prize, a gold medal, for the "Beeston" greenhouse heated with the "Beeston" boiler, also a silver medal for a span-roof frame. The roof lights of the greenhouse slide up and down, and are secured by a very simple arrangement at intervals of 3 inches, so that they cannot be lifted by the wind. The side lights are fast, and side ventilation is here given by the registered iron ventilators placed under the sill, so that the air is warmed by passing over the pipes as it enters the house. One door is provided for each house unless otherwise ordered. The lights can be at once removed if necessary to expose the contents of the house. The iron rafters which span from sill to sill give the "Beeston" houses great strength, and there is no danger of sides or roof giving way after a few years' wear. Messrs. J. Veitch & Sons were awarded a silver-gilt medal for a splendid collection of their world-famed Amaryllises, and Messrs. F. Sander & Co. secured a gold medal for six new plants. Messrs. W. Cutbush & Sons, Highgate, as we mentioned last week, were represented by an extensive group of hardwood plants. The Veitch Memorial prize for the best hybrid plant in the Exhibition was awarded to M. Maréchal, Liège, for *Vriesia brachystachys major*, a form having an inflorescence of greater length than the type.

— **LIME JUICE.**—As indicating the demand for this wholesome product we are informed that the "Hilda" has just arrived in the Mersey from Montserrat, West Indies, with 50,000 gallons, being the first arrival of new season's juice. This vessel is now regularly engaged in bringing over Montserrat lime juice, which is consigned solely to Messrs. Evans, Sons & Co., Liverpool.

— **GARDENING APPOINTMENTS.**—Mr. William Poole, for the last three years foreman at Nostell Priory Gardens, Wakefield, has been appointed head gardener to General Marsack, Elstead Lodge, Godalming. Mr. Frederiek Tapper, foreman at The Gardens, Rangemore, Burton-on-Trent, has been appointed gardener to Lady Scott, Sundridge Park, near Bromley, Kent.

— **WINCHESTER AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.**—The Committee of above Association have arranged for a practical test of the value of the so-called preventives of the Potato disease to be held the present season, the application of the remedies to be given before such of the members as care to be present. This is a very good idea, and worthy of consideration by other societies in other districts.

— **OUTDOOR AURICULAS.**—As evidence of the diverse nature and earliness of the season as compared with the average of preceding springs, I may mention that outdoors it was a most unusual thing to have Alpine or laeod Auriculas in bloom at Bedford, when I lived there, in the middle of April. When I looked in at the seed growers last week I found hundreds of plants not merely in full bloom, but some were apparently getting rather past their best. Under ordinary conditions, even in cool houses and frames, it seldom happened that plants were at their best by the Auricula Show.—A. D.

— **HORTICULTURE IN SURREY.**—Mr. A. Dean, who with Mr. Luckhurst and Mr. W. P. Wright, has been assisting Mr. J. Wright in delivering lectures on horticulture in Surrey under the auspices of the County Council Technical Education Committee, gave the last of the winter course at Leatherhead on Tuesday last week, taking for his theme, by special desire, "Hardy Perennials," dealing with this popular section of garden flowers, from Christmas Roses to Michaelmas Daisies. The lecture was admirably illustrated by a beautiful show of hardy flowers kindly furnished by Messrs. Barr & Son from their Long Ditton grounds, also many bunches of charming varieties brought by Mr. Peters, (gardener to H. P. Sturgis, Esq.) and Mr. Mease (gardener to A. Tate, Esq.), Leatherhead. It need hardly be said that, whilst greatly assisting the lecture, these flowers were also keenly inspected at the close by the audience, whilst practical topics, such as vegetables, divided into respective sections and dealt with fully, and fruits in the same way, have proved exceedingly interesting. Flowers have hosts of admirers, and any talk concerning them is always followed with the liveliest satisfaction.

— **FIBROUS ROOTS.**—We find a surprising want of knowledge as to what is a fibrous root. Really a fibre, as technically understood, is not a root any more than a leaf is a branch of a tree. Roots, to be sure, are formed out of fibres, and when a tree has a number of small roots it is not uncommon to say that it has an abundance of fibres. Fibres are the small white, thread-like that are principally engaged during the growing season in gathering and collecting food for the plants, just as leaves do the same work for the branches. Towards the end of the year nearly all these fibres die; only a very few that are present live over until the next season. They are not roots. If, however, one lives over, it eventually becomes a root. Fibres, as thus limited, are of no sort of benefit to a tree in transplanting. What is needed is an abundance of healthy, vigorous, one or two-year-old roots. Sometimes people say that in order to transplant a tree successfully it is well to dig around it one year, first cutting off the main roots, and in this way getting a number of "fibres" for the next year. It is in this sense that the word tends to mislead. Fibres are not thrown out when these larger roots are cut but small roots. One cannot have too many of these small one or two-year-old roots in transplanting. They are full of life and vigour, and aid materially in supporting a plant. But fibres, as limited in their definition in this paragraph, are of absolutely no consequence, and in many respects are rather an injury than a benefit. We have known evergreen trees moved with what were supposed magnificent roots—that is to say, there were thousands of real annual fibres—and yet die afterwards, no one seeming to understand why it should be so; but the trouble is that this large mass of sponge-like threads prevents the earth from coming into contact with the large roots, and then they are far more of an injury than a benefit.—(*Meehan's Monthly.*)



— OPENING OF A PUBLIC PARK AT COLDSTREAM.—Wednesday last witnessed the opening of the Home Park for the use of the inhabitants of Coldstream. The park is the gift of the Right Hon. the Earl of Home of The Hirsell, and in order to show the appreciation of the general public for the generous gift, and of the great boon which it is expected to confer upon the inhabitants, a general holiday was observed.

— CARNATIONS IN AMERICA.—The popularity of the Carnation in America may be judged by the fact that according to Mr. Richard T. Lombard of Wayland, Massachusetts, in a paper recently read before the Horticultural Society of that State, nearly 4000 florists are engaged wholly or in part in growing Carnations for cut flowers. It is estimated that fully 200,000,000 of these flowers were sold last year, yielding above 1,000,000 dols. to the growers.

— LABELLING OF FOREIGN FRUIT.—The Government, says a daily contemporary, have decided to appoint a select Committee to inquire into the extent to which foreign fruit is sold as English grown. A large quantity of inferior fruit from abroad is sent to this country, where it is labelled "English grown." The Merchandise Marks Act might well be extended in this case, as it has become the custom to export English made packages to the continent to be filled with Tomatoes, early Potatoes, and fruit.

— HASTENING CABBAGES.—I presume "A. D." (page 316) alludes to the market supply when referring to the stationary manner of the autumn planted Cabbages, as in private gardens there is no occasion to allow them to remain long in this state. In the case of the plantation of any one variety a portion ought to be hastened on by giving them a thorough soaking of liquid manure if dry weather is experienced during the latter half of March. In the absence of liquid manure a sprinkling of nitrate of soda on the soil about the roots, washing it in with clear water, answers the same purpose as the liquid manure. In addition to hastening for use a portion of the stock it prevents a glut at one time, this being the only fault of Ellam's Early that I have experienced—viz., the whole crop "turning in" simultaneously.—E. M.

— WEATHER AT SWANMORE.—Another week has passed since my last note, and still no rain has fallen. With the exception of the slight shower recorded of 0.04 inch on the 16th, fifty-two dry days have been experienced. The sun has increased in power; to-day (24th) the thermometer registered 84° in the shade, with a minimum temperature this morning of 44°. On the 20th, 84° were also registered, the minimum being 52°. On Friday the readings were 82° shade maximum, 54° minimum; on Saturday, 79°, 54°; and on Sunday, 80°, 42°. What a contrast in the temperature as compared with the last two years at the same date! On April 20th, 1891, the readings were 56° and 32°; on the 24th of same month and year the register was 68° and 31°. On the same dates in 1892, 51° and 31°, 68° and 42° were the figures recorded. Thermometer in shade to-day (25th inst.) registered 87°, minimum 49°. In 1891, 57° and 31° was the reading; 1892, 61° and 39°. The grass on the lawns here is now quite burnt, in many places equally as bad as in the Jubilee year. The temperatures have been registered by a corrected thermometer.—E. MOLYNEUX.

— WINTER TOMATOES.—I saw the sample of Tomato "Lady Bird," placed before the Fruit Committee of the Royal Horticultural Society, at the Drill Hall, on the 14th ult. Somewhen last autumn this variety, it will no doubt be remembered, obtained a certificate of merit as a winter-fruited variety. It was a most astounding award, because when on one or two occasions during the previous winter samples were shown, they were so very poor as to be unworthy of notice. Now, again, when fruits of the variety are sent, small deeply corrugated, like many of the old or outdoor sorts, and in the month of March also, they are found to be so poor as to merit no notice—indeed, those I saw would not have sold, even at the present time, retail at more than 3d. per pound, so inferior were they to the best imported fruits, and yet this is a variety that has been awarded a first-class certificate because of its winter fruiting merits. Can such an award be justified? If this be the best winter-fruited Tomato we have, then bad must be the worst. The variety has no special merit as a summer fruiter beyond many others. If anyone can give us a variety of Tomato that will not only set and fruit freely in winter, but also give good handsome fruits four to the pound, they will render the home grower much service.—A LOOKER-ON.

— A WORLD'S HORTICULTURAL CONGRESS will be held in Chicago in August, and, says the "Garden and Forest," papers are to be read on the following subjects:—Technical Horticultural Education, Relation of Experiment Stations to Commercial Horticulture, Horticulture in its General Relation to Art, Improvement of Public Grounds (schoolyards, cemeteries, highways, the development and preservation of natural beauty).

— PAID SECRETARIES OF HORTICULTURAL SOCIETIES.—*Apropos* of your remarks on page 318 anent paid Secretaries, it may be interesting to state that by mere chance I was recently glancing through the annual report of the "West of Scotland Rosarians' Society," and came across the following item in the balance-sheet:—"Salaries of Secretaries and Treasurers, £7 7s." Here we have an instance of at least two gentlemen (I do not know how many more) sharing 7 guineas as salaries, whereas the Secretary of the National Chrysanthemum Society objects to about £50 per annum being termed a salary.—ONE INTERESTED.

— AGAPETES BUXIFOLIA.—Although easily grown and of handsome appearance, this plant has not hitherto received the recognition it deserves. It has been in cultivation for about forty years, but is still rarely met with outside botanical establishments. It is closely related to *Vaccinium*, but is superior to any of the *Vacciniums* usually grown under glass. It is of shrubby habit, and the long, slender branches are covered with small, dark green, Box-like leaves. The flowers are produced singly in the axils of the leaves on the ripened wood. They are tubular, fully an inch in length, and of a bright red colour. The plant is naturally an epiphyte, and in its native habitat (Bhotan) is found growing on the trunks of trees. It succeeds admirably, however, either planted out in beds or in pots in sandy peat. It will thrive in any ordinary greenhouse. Although it attains a height of 4 or 5 feet, small plants flower freely, and are very attractive. Propagation is readily effected by inserting cuttings of half-ripened shoots in fine peat and sand in a mild bottom heat.—A. B.

— FLOWERS IN MASSES.—Looking at a mass of *Alyssum saxatile*, *Iberis gibraltarica*, and *Phlox setacea* on the rockery here to-day I thought how much more effective are such plants when growing in masses of, say, 4 feet square, as compared with the higgledy-piggledy method of arrangement—a plant here and there by itself. Not only does this method of planting apply to rockery plants, but to trees and shrubs, as well as to many things in the herbaceous border. *Gladiolus brenchleyensis* is more effective when growing in clumps of five or even three, as compared with single plants. The *Narcissi*, again, are much grander planted in clumps, as for example, *Horsefieldi*, *Sir Watkin*, or even the *Pheasant's Eye* variety. In a like manner note the effect of half a dozen plants of the Spanish Broom, *Gorse*, a clump of *Spiræa ariæfolia*, *S. prunifolia* fl.-pl., or even a mass of *Dogwood* in the winter, in comparison with single bushes. Perhaps on the rockery the massing system of planting is the more effective as compared with isolated roots. *Gentiana acaulis* or *verna* are distinct proofs of this argument. *Aubrietias* afford excellent instances of the benefit derived in following the massing system.—E. M., *Swanmore Park*.

— LATE QUEEN BROCCOLI.—Mr. W. Strugnell, Rood Ashton Gardens, writes:—"I can fully endorse the remarks of Mr. Dunkin (page 296) as to the value and hardiness of the Late Queen Broccoli, and in many gardens I fear this is the only one remaining to any extent for furnishing a supply this spring. Even this has suffered in our ease much more considerably than is usual for the variety; but the weather at the end of the last and commencement of the present year was of so severe a nature that without any protection from snow the results are not surprising. Broccoli is so valuable a crop that it can scarcely be ventured on to dispense with even midseason varieties, but as intimated by Mr. Dunkin it is a question for serious thought whether it is wise or not to occupy so much space with them. The dry weather experienced up to the time of writing (April 18th) has proved a great hindrance to the germination of the earlier sown seeds of Broccoli and other winter vegetables, and if it continues artificial watering must be resorted to, to obtain any plants at all from outdoor sowings. Assistance have been provided in the case of the midseason sowings by soaking the drills previous to depositing the seeds; but this will have to be further supplemented by watering if rain does not come soon. Next to Late Queen Veitch's Model has proved the hardiest with us, and these, though small, will be valuable as a change to forced vegetables and the long continued supply of winter greens, which are fast reaching the end of their tether."



— WINDSOR, ETON, AND DISTRICT ROSE AND HORTICULTURAL SOCIETY. — Mr. C. Romaine, Hon. Sec., The Priory, Old Windsor, writes :—"The 28th June having been fixed for the Rose Show at the Earl's Court Exhibition, the Show of the above Society is postponed to the following day, Thursday, June 29th. Intending exhibitors are requested to alter the date on their schedules and entrance forms."

— WEATHER IN NORTHUMBERLAND.—A daily contemporary recently observed, "The thermometrical readings taken on April 14th at Messrs. W. Fell & Co.'s Wentworth Nurseries, Hexham, showed the highest register to be 68°, and the lowest reading 24°, or 8° of frost. On the night of the 11th, or morning of the 12th, 10° of frost were registered, and within a few miles from Hexham there was ice an eighth of an inch in thickness on some standing water. The Plum and Pear trees are profusely covered with blossom, and the gardens now present a pleasing aspect. There is, however, a great need of rain."

— RHODODENDRON GRANDE. — This magnificent Himalayan Rhododendron was introduced in 1849 by Sir Joseph Hooker, who collected seeds and sent them to Kew. The specific name is very applicable, as good plants have a striking appearance both in flower and in leaf. The leaves are 12 to 16 inches long, and 3 or 4 inches broad. The large trusses are composed of about twenty of the campanulate flowers, each of which measures about 3 inches across. In the bud state they are rosy pink, changing with expansion to creamy white with a crimson stain at the base. It is figured in the "Botanical Magazine," t. 5054, as *R. argenteum*, a name under which it is no doubt familiar to many of our readers, and which has reference to the silvery under surface of the leaves. A rose-coloured variety originated at Kew some years ago, and is figured in the "Botanical Magazine," t. 6948, as *R. grande roseum*.—A.

— GARDENS IN TASMANIA.—If we may accept literally Sir Edward Braddon's glowing descriptions of gardens in Tasmania, says *Nature*, that island ought to be the paradise of horticulturists. Speaking the other day before the Indian section of the Society of Arts, he said of the garden he himself cultivated there for ten years: "All the year through that garden had its charms of colour and perfume to lavish upon me; always there were life and growth in progress, and new delights unfolding themselves out of Nature's bounteous lap." His monster Pelargoniums, that stood from 3 to 4½ feet high, and had a circumference of 9 to 27 feet, were sources of increasing pride and pleasure to him, as they were of successive glories of flower. As for his fruit trees and vegetable garden, they yielded a never-failing supply of food for the table that in England, purchased of the greengrocer, would have cost about £100 a year. "Many another garden like unto mine is there," said Sir Edward, "in Tasmania and New Zealand, gardens in which all the fruits and flowers of the temperate zone flourish abundantly, and in which it is possible for a European to work all the year round without fear of sunstroke or frostbite." These panegyrics were uttered in the course of an address in which the speaker tried to persuade Anglo-Indians that after their term of service in the East they would find it pleasanter and more profitable to settle somewhere in Australasia than to return to England.

— COMMODORE NUTT LETTUCE. — For forcing this is an extremely useful little Lettuce, growing quickly under moderate forcing, and being of medium size may be planted more closely in rows than Paris Market. From seeds sown on a mild hotbed in which were planted an early batch of Asparagus in February we had plenty ready for cutting by the last week of March. From that time several hundreds of Lettuces have been used, and a portion of the same sowing planted quite close to a south wall are now supplying firm, compact heads. These were put in quite as a chance crop, the early part of March not being a favourable time for planting Lettuces that have been raised under glass, and since these have done so well the regret is that more were not planted at the time. A mild bed prepared in time for transplanting the thinnings of the early sowing resulted in a matured crop quite as soon as those left undisturbed, though perhaps slightly less in size of head. I had not previously tried this early forcing variety, but its usefulness and quick maturity will ensure for it a permanent favour in our case for the purpose in question. Although I am not prepared to say that it is quicker in turning in than Paris Market generally, it was so with us, and its compact growth and trifling waste of outer leaves commends itself to the notice of those who require as many as possible from a small space. —W. STRUGNELL, *Road Ashton Gardens*.

— PHOSPHATES FROM INDIA. — Sir J. B. Lawes has recently received, through the India Office, a consignment of phosphates from Madras, with a view of their commercial value being ascertained. The specimens, of which we ("Natural Science") have been favoured with samples, are well formed nodules, with a nearly smooth buffish coat, and internally appear very pure. Unfortunately, they show no traces of fossils; but they come from Utatur, where there are both cretaceous and eocene beds.

— FLOWER SHOW AT VIENNA.—The Archduke Charles Louis opened the Flower Exhibition of the Horticultural Society of Vienna on April 19th. All the fine gardens in the neighbourhood of the capital contributed. Count Harrach's beautiful Azaleas were a prominent feature in the Exhibition. Herr Marx had two splendid groups of Roses, and the Horticultural Society a splendid group of miscellaneous plants and flowers. A magnificent group of Palms, shrubs, and flowers, covering an area 40 feet long and 30 feet broad, was staged. Pitcher-plants were also well represented.

— EARLY HAWTHORN BLOSSOM.—I send a piece of White Thorn nearly out in bloom picked in one of our lanes. Some is still more advanced. This is unusually early. Apple trees here are making a splendid show. The long and severe drought and heat are, however, retarding the growth of the herbage considerably, and in consequence cattle as a rule are suffering a great deal and looking very poor. In many places the soil is quite "gaping" owing to the heat.—ALBERT ROOD. [Our correspondent neither gives date nor locality in his letter, but the post-mark on the envelope appears to be "Bridport."]

— CHOISYA TERNATA.—"E. M." writes :—"Those who have not grown this pretty Mexican shrub at the foot of a south wall have missed a treat. At the present time we have two plants of it growing in such a position completely smothered with its pure white blossoms. The plants in question cover a space 15 feet wide and 5 feet high. The method of training the branches should not be a close one, but allow them to grow freely outward, resulting in more bloom. This Choisya is one of the easiest plants to propagate imaginable, stubby side shoots 3 inches long inserted in sandy soil around the edge of a 3-inch pot, plunged in a gentle bottom heat strike readily."

— EARLY FLOWERING OF PLANTS.—We ("Natural Science") would like to suggest the advisability of a more scientific method in the observation of dates of flowering of plants. One constantly comes across notes recording the exceptionally early appearance of certain flowers. It is forgotten, however, that the premature opening of the flowers may often mean death to the plant, or at any rate a serious waste of material. The production of seed is the final end to which all parts of the plant are modified. If by early flowering the plant is enabled to seed more freely, the date of flowering will tend to become earlier and earlier; but if the flowering is premature, and is not followed by the formation of seed, then the date will become later and later, as the too hasty individuals are killed off. Observers should not pick these early flowers, they should mark the specimens and return later on to see whether they have, or have not, produced any seed. No one appears yet to have noted whether the Buttercups and Dead Nettles, which flower more or less all through the winter, produce seed from the winter flowers.

— PRUNING AND TRANSPLANTING.—There is a difference of opinion, says "Meehan's Monthly," among some planters as to the propriety of pruning in the branches of fruit trees when they are planted. There is no question among those who have had extensive experience, they all concur as to the wisdom of pruning in under most circumstances when trees have been transplanted. It is chiefly from the evaporation of their juices faster than the roots can draw in sap to supply the place of that waste that they die, and pruning in the branches prevents too great an evaporation, and that is the reason why the practice of pruning in is to be commended. When the trees have been planted without such pruning, in the Pear, for instance, it is not unusual for them to remain a whole season and send out only a few leaves, and without making any growth of branches; indeed sometimes Pear trees remain the whole season alive without making any leaves at all. They are just able to meet the demands of evaporation, leaving nothing for growth. Whenever a transplanted tree does not show signs of pushing out leaves when the proper time comes to make leaves, the pruning knife should at once be called in, and the branches pruned. Hundreds of transplanted trees which die might be saved by a judicious use of the pruning knife.



## RHODODENDRON FRAGRANTISSIMUM.

AMONGST the many hybrid Rhododendrons that are now in cultivation the above variety occupies a foremost position so far as its beauty is concerned, but it does not appear to be so generally well known as it

and Sons in 1869, and we have seen it flowering in the Holloway Nurseries.

The spray depicted in the illustration (fig. 63) was obtained from a plant grown by Mr. Stevens, gardener to W. B. Smith, Esq., Hetherset, Leigham Road, Streatham. The plant alluded to was a fine specimen,



FIG. 63.—RHODODENDRON FRAGRANTISSIMUM.

should be. *Rhododendron fragrantissimum* has been in cultivation for at least a quarter of a century, having been certificated by the Royal Horticultural Society in April, 1868. We are unable to trace its origin with accuracy, but it is supposed to be the result of a cross between *R. Edgworthi* and *R. ciliatum*. It was sent out by Messrs. Rollisson

and admirably illustrated the adaptability of this variety for greenhouse and conservatory decoration.

The flowers, as will be seen by referring to the engraving, are large, white, sometimes very faintly tinged with rose, and are deliciously fragrant.





#### THE WEST OF SCOTLAND ROSARIANS' SOCIETY.

THE Exhibition of the above Society will be held in the Victoria Hall, Helensburgh, on Friday, July 14th, and many of the classes are open to any growers in the United Kingdom. A good schedule has been prepared, the highest first prize offered being £3, or the Society's gold medal for sixty blooms, distinct varieties.

#### THE DEAN AND THE DUCHESS.

It is not long since one of our Scottish contributors, the Rev. David R. Williamson of Kirkmaiden, in a letter to his friend the young Duchess of Sutherland, recommended Her Grace to read the Dean of Rochester's book, assuring her that if she did so she would inevitably become, as hundreds have done after perusing the same volume, an ardent amateur rosarian. This prediction has been fulfilled, for since that period the Duchess has been assiduously engaged in establishing a Rose garden at her Lillieshall residence in Shropshire, with the assistance of Mr. Benjamin R. Cant, the Colchester rosarian.

We also understand that Her Grace has given Mr. Williamson an invitation to Trentham and Lillieshall, that he may have the pleasure of visiting her Orchid house at the former, and her miniature rosarium at the latter mansion house.

The Duchess of Sutherland, whose name is a valuable addition to the list of eminent amateur horticulturists, is a daughter of the late Earl of Rosslyn, and inherits her father's poetical gifts. She is the authoress of a picturesque book entitled, "How I Spent my Twentieth Year," which has already passed through several editions.

#### ROSES AND ROSARIANS.

I AM much obliged to "W. R. Raillem" for the information he has given me on page 310. As he appears to be well-meaning and equally well informed, I am quite willing to accept all his statements as correct.

The mistake regarding Madame Isaac Pereire was a trifling one, which I observed shortly after I had sent off for publication the article in which it occurred. If I rightly remember, "D., Deal," whom I greatly respect, spoke simply of that Rose as "Isaac Pereire." But this probably was done for the sake of condensation, and not from lack of knowing that the Bourbon variety in question represented Isaac's wife. It is, I find, included by Mr. Wm. Paul among Hybrid Perpetuals; but he speaks of it also as a Perpetual Bourbon, and I think that most rosarians, whether amateur or professional, will bow to his decision.

I may also say, while writing on this subject, that Mrs. Paul (I mean the Rose) is one of my most valued possessions. I have given her a commanding position in my garden, where she has the *Lilium auratum* (rubro-pictum) on the one side and the Duke of Edinburgh on the other, and I do not suppose she has ever received a better testimonial than I recently gave her in the *Journal of Horticulture*. So the great English, Scottish, and Irish rosarians are unanimous in pronouncing this magnificent Rose to be a pure Bourbon. I accept their verdict unquestioningly.

When recording in recent articles contributed to your Journal the great services rendered to amateur rosarians by the Dean of Rochester, one of whose latest disciples is the young Duchess of Sutherland, it was my intention also to have spoken appreciatively of those of the Rev. H. D'Ombraim, who has done much for the popularising of French Roses in England. His services to the more famous British raisers of this most beautiful of flowers have also been very great. This fact is acknowledged, as I am in a position to testify, by several of the most eminent English rosarians. For this and many other reasons I am sincerely glad to remember that a superb Bourbon Rose, well worthy of that honour, has been inseparably associated with his distinguished name. Happy are they whose efforts are thus crowned with a floral immortality!

—DAVID R. WILLIAMSON.

#### NOTES FROM IRELAND.

##### CARTON, MAYNOOTH.

THE princely and principal seat of the Duke of Leinster, situated in North Kildare on the borders of Meath, consists of a walled-in desmesne of 1000 acres, with four lodge entrances and an outer lodge at Maynooth giving entrance to a semi-private avenue leading to the desmesne proper. The world-famed college of St. Patrick faces the main street of Maynooth, whilst on the right are the massive ruins of its castle, with Ivy-clad keep some 80 feet high, bearing date 1180, a residence of the Earls of Kildare until Cromwell gained by treachery what his bombardment from Crew Hill failed to effect. Mementoes of the siege are to be seen at Carton in the iron cannon balls found about the old castle, together with a massive and curious stone table bearing a Latin inscription and date 1553, which, happily, has not suffered, and now stands in the centre of the Italian garden.

The mansion, built of dressed limestone, ranks with the finest of the

stately homes of Ireland, the southern front being very imposing, commanding a view of the Dublin mountains some twenty miles distant. The reception rooms, in keeping with the stately exterior, contain some fine ceilings, that of the salon, executed in the early part of last century, being a *chef d'œuvre* of Italian artists, whose names are commemorated on a brass plate. This room contains also a fine organ in a white and gold case, exquisitely designed by a member of the family. Generations who have passed away look down from the walls, and many heirlooms of the noble house of Fitzgerald are gathered here.

The desmesne is bisected by the Rye, a tributary of the Liffey, midway expanding into a lake of considerable dimensions, with several islands planted with Laburnums and scarlet Thorns. The Golden Elder is also conspicuous by the fine tone of colour it obtains in summer; while in winter very rich is the purple-red Dogwood fringing both islands and lake. Neither in England nor Ireland have I seen it so bright and effective as here. As with that, so with the golden and red Willows. The lake abounds with wild duck, and its smaller but more graceful cousin, the pochard, makes an annual visit from its Norwegian home. Herons and otters find here food to their liking.

At the south end of the lake is the cottage and grounds—outside a low, quaint, picturesque building; inside a bit of fairyland, walls and roof sparkling with shells and rock crystal, the work of a former Duchess of Leinster. The cottage is also a museum of Irish antiquities and curios from foreign lands collected by members of the family. The undulating grounds are pretty and interesting, containing some fine Coniferae, including good specimens of the feathery Hemlock Spruce. Near the cottage is the rare, sweet, white Fringe Tree, *Chionanthus virginicus*. West of the cottage Snowdrops grow *hio et ubique*, and the river banks are clothed with at least an acre of *Omphalodes verna*, happy on the limestone, as is the double form of *Saxifraga granulata*. In a small enclosed garden for the use of the caretaker the old walls are cushioned with the modest *Erinus alpinus*, very beautiful in its deep purple glow, hidden from the outer world.

The river, after skirting the cottage grounds, flows partly through a natural rocky gorge. The Foetid Hellebore is abundant, and sheets of *Hypericum calycinum* drape the limestone; while the Spindle Wood (*Euonymus*) hangs out its coral decorations in early winter. Crossing the Black Bridges, on which grow the Ceterach and *Asplenium trichomanes*, the upper road is reached by the Queen's Pass, a steep carriage way, cut in the rock by Augustus Frederick, third Duke, and first used by Her Majesty, who visited Carton in 1849. Passing a fine plantation of Lilacs the Bogwoods are reached. Alterations (improvements perhaps) were made in the days of "Capability Brown" from designs furnished by him. If any vestiges of his work remain they are probably to be found here in some splendid Silver Firs, remains of avenues, which can still be traced. The green glades of the Bogwoods are lined with *Syringa* and *Rhododendrons*. Moygaddy, the northern part of the desmesne, is planted largely with Spruce and Silver Firs; here the finest *Rhododendrons* are found. That venerable horticulturist, the late Mr. Geo. Cunningham of Liverpool, told me he had many years since received a personal order from the Duke for some thousands; here they are, but he has passed away so quietly and unobtrusively, yet so strong a link connecting gardening past and present, that I may be pardoned this digression. When I first saw him on his annual Irish trip he said, "For forty consecutive years I have visited Carton, each time dining in the gardener's house." I need hardly say he continued to do so while I was there, nor how much I enjoyed the anecdotes of this gentleman, gardener, and scholar, who saw the death of Huskisson at the opening of the first railroad, and had dined with Paxton in the gardener's house at Chatsworth.

From the gardens facing the mansion a broad walk through a shrubbery leads to the kitchen garden. Midway on the right is a sequestered nook with some fine Tulip Trees, and large bushes of the Snowdrop Tree, *Halesia tetraptera*. Cedars in variety are plentiful; several trees of *C. Libani* are grand, but the Beech is par excellence the timber tree of Carton. Here in this shrubbery are giants sending far up their clean silvery grey boles, some with pendulous branches again sweeping down, the whole forming a beautiful avenue. In the autumn of that year of phenomenal sunsets early frosts had minted the foliage into old gold. One evening is indelibly impressed on my memory, when that weird after glow had relighted the dying day. The effect was magical. In stillness unbroken by the whisper of a leaf I feasted on this enchanting scene of Nature till night's curtain shut it out. Ere morning a gust of wind had brought the golden glory to the ground, where it lay, alas! nothing but leaves. "*Sic transit gloria mundi*."

The kitchen garden, 10 acres of which is enclosed by a lofty and substantial wall, was formerly more than double the size, being then continued to the boundary wall of the desmesne. Entering the garden the head gardener's house, old-fashioned, roomy, and comfortable, lays in a sunny nook. A long range of fruit houses bisect the garden transversely, behind these lay the plant houses and ranges of pits. Beautiful Yew hedges clipped into solid walls of green give good shelter. Pears do remarkably well on the walls, some very old but fine specimens of horizontal training tell of the long ago. As at Straffan on the Liffey, so here, spring frosts are troublesome. A long sheet of water bounding the garden on one side and continued into the shrubbery has been suspected, and probably is guilty of lowering the temperature, in which a few degrees either side of freezing point means so much with fruit trees in blossom.

Near the mansion is a small secluded plot of consecrated ground selected by the late Duke as his last resting place; and here, when a



united nation kept the Sovereign's Jubilee, was he laid, so soon to be followed by his bereaved lady the late Duchess of Leinster.

In closing these notes I may add they are more a character sketch of this fine old desmesne than an up-to-date account of it. Minor alterations have been made since the writer saw it, but the Duke inherits in a marked degree his ancestor's love of their noble trees. The Duchess is devoted to her Palms, Orchids, and hardy flowers, while Mr. Black, the head gardener, finds plenty to do in all departments, and does it well.—E. K.

## AIDS TO FRUIT CULTURE.

### GLASS COPINGS FOR FRUIT WALLS.

I WAS never before so much impressed with the great value and utility of this aid to outdoor fruit cultivation as I was a few days since on visiting the beautiful gardens at Hollowmead, Bishopsteignton, Devonshire, the residence of W. Barrow, Esq. The large kitchen garden is nearly in the form of a square, surrounded by good walls, one half of which—viz., those portions having a south and south-west aspect, having a light iron and glass coping about 20 inches in width of the pattern introduced years ago by Mr. Rendle.

Mr. Barrow had this coping erected some six or seven years since, and speaks in high praise of its value. Nearly the whole of the south wall is well covered with Peaches and Nectarines, the trees being in the very best condition and well furnished throughout with excellent wood thickly set with fruit, which is now being vigorously thinned. These, I am told, have never missed carrying heavy crops of fruit each season since the coping has been erected. Previously the trees scarcely ever ripened their wood fully and properly, carried their green foliage to very late in the season, and bore fruit very indifferently. Since the coping has been there, though, all this is altered. The wood ripens fully and early in the autumn, causing the leaves to mature and fall off early and large blossom buds to be developed. The fruit also is larger, more brightly coloured, and of better flavour.

On the south-west wall are Pears, Plums, and Cherries, all of which have set heavy crops of fruit, and are apparently deriving almost as much benefit from the glass above them as do the Peaches. Seeing, then, the great value of this aid to fruit culture, that its first expense is but very moderate, and the future cost in maintenance is very small indeed, one is led to wonder that it is not more frequently seen in fruit gardens. Certainly fruit cultivators have not all fully realised the changes it is capable of producing in their trees and their fruit crops, or it would be far more generally adopted.—W. K. WOODCOCK.

## THE SCOUNDREL SPARROW.

I AM disgusted to find that my best and finest Apple trees have been absolutely stripped of bloom—quite lately, since the green leaves have shown. This, I believe, to be the work of sparrows; I am always about, and must have heard or seen them if any bullfinches had come. The tiny blossom buds do not appear to have been eaten, but wantonly plucked off, and this looks like sparrows, which in some places treat Primroses and other flowers in this way. Besides polishing off all my Gooseberries and Red and White Currants, they have also destroyed my Black Currant buds, picking them all off when they were quite green.

I am close to a large farmyard, and where the sparrows swarm; the farmer complains bitterly of their depredations on his corn in July and August, but after the manner of his kind makes no attempt to stop their nesting by scores all over his premises.

But I have sworn vengeance, like the villain in the play, "No matter-r-r, a time will come!" I will have no mercy on the scoundrel sparrows, young or old, egg or nestling; in their time of weakness I will be their enemy. I too—oh, yes! I will feed them in the snow, like other benevolent persons; but the last item on their menu shall be dust shot. Boys shall be bribed to harry their nests. All the year round will I worry them. And if they injure my Apple trees next year I will forgive them!—W. R. RAILLEM.

P.S.—I have just seen three sparrows picking off the not quite opened blossoms of a Wellington Apple tree as fast as possible, and letting them fall to the ground. But the practice has become unhealthy among sparrows. All three died suddenly before my eyes.—W. R. R.

[Will all sparrow friends and sentimentalists as readily "forgive" our correspondent?]

## AURICULAS AT SLOUGH.

A VISIT to the nurseries of Mr. Chas. Turner at Slough is at any time full of pleasure, interest, and instruction, and never more so than at this time of the year, when the Auriculas are in the zenith of their beauty. Knowing what such a visit had in store for me I availed myself of an opportunity, and in every way I was amply repaid.

To talk of Auriculas and their hybridisation to anyone genuinely interested in them is the delight of Mr. John Ball, truly a veteran and an authority on these flowers, as much so, in fact, as he is on Carnations. For a period of forty-five years he has been experimenting, and indeed vastly improving during the whole of that time. Many varieties, says this excellent authority, which were grown forty and fifty years ago and still prominently before the public, and may be found in all first-

rate collections. More especially is this the case with the show or stage section. Though the founder of the firm has passed away from our midst the records of his works are still with us, proving him to have been a florist in the truest and best sense of the word.

Amongst the best of the Show varieties in flower at the present time at the Royal Nurseries are:—Acme, a grand old white-edged variety which is still highly appreciated; Black Bess, a beautiful self of the most perfect-form; Trail's Beauty, a very fine white edge; Chas. E. Brown, a grey-edged of much merit; Conservative, a magnificent white-edged flower and possessing the somewhat unique distinction of having green foliage; Chas. J. Perry, a charming old self; George Lightbody, which amongst the green-edged still holds a place in the front rank; Heather Bell, a grey edge of much merit; Lancashire Hero, a grand green-edged; Heroine, a charming dark crimson self; Helen Lancaster, another self; Lord of Lorne, which ranks amongst the very best of the crimson selfs; Rev. F. D. Horner, a flower worthy the name, and the green edge of the day, perfect in every way; Mrs. A. Potts, a rich dark purple self, symmetrical in shape and strong in growth; Mrs. Dodwell, undoubtedly one of the finest of the white-edged; Richard Headly, a very fine grey-edged variety; William Brockbank, a fine bold flower with a perfect grey edge; Alexander Meiklejohn, also a grey edged, and many other very beautiful varieties.

Foremost among the Alpine section must be named Chas. Turner, which has a bright red ground shading to brown, with a pure golden paste, a beautiful flower indeed, and one which is worthy a place in every collection; Countess, dark ground shaded with lilac, and having a white paste, is a magnificent variety; Fred Knighton, black ground shaded red with a gold paste, is a grand flower. Harry Turner must be accorded a place in the front rank, for it is a truly charming variety with a white paste, the ground colour being almost black shaded with purplish red; the flower is of much substance, and of a shape which leaves nothing to be desired. Alarm is an early flowering sort, having a black ground with a reddish shading and a gold paste; Invincible has a gold paste, with a dark ground shaded deep red; Mabel is a very good variety, with a dark ground shaded plum and a straw paste; Mrs. Harry Turner has a white paste and a black ground, beautifully edged with violet, the flower is large and distinct, and the plant throws a very fine truss; Harry Furniss is a charming variety, black forming the ground colour, which is shaded and faintly edged with red, and having a clear gold paste; International is another very fine gold-pasted variety, the ground colour of which is black, clearly edged with bright red; John Ball is a rich dark crimson self with a bright yellow paste, the truss is of good size, and the flowers of perfect shape and substance; Winifred is one of the most charming varieties in the collection, the flower is perfect in form and substance, the ground colour being a very dark crimson beautifully shaded with lilac, and have a clear white paste; Mr. H. E. Milner has a straw paste and a rich crimson ground shaded with purple, and is a very fine flower; Mrs. Ball is a perfect flower, having a shaded crimson ground and a bright lemon-coloured paste; Magnet has a gold paste, the ground colour being rich crimson shaded deep rosy red; Roland is a very distinct variety, having a black ground shaded with rosy purple, the paste being yellow in colour; and Sunrise with bright gold paste, and black ground shaded rich crimson. There are many other highly commendable varieties, but these will suffice to show that the collection is an excellent and representative one, and comprises all the most meritorious kinds in cultivation.—VISITOR.

## NEWCASTLE SPRING SHOW.

APRIL 19TH AND 20TH.

THE spring Show of the Durham, Northumberland, and Newcastle-upon-Tyne Incorporated Botanical and Horticultural Society was held on Wednesday and Thursday, the 19th and 20th inst., in the Town Hall, Newcastle-upon-Tyne. The Society was fortunate this year in the weather, and the attendance both days was all that could be desired, and the receipts amounted to £70 more than last year, or a total of £193.

The Show was in every respect one of the very best the Society has ever held. The entries in many instances were numerous, and the hall was well filled with plants. The exhibits were of a very high class order, and to those that remember the inception of the first spring Show seventeen years ago the result is all the more gratifying. We may state that Mr. W. J. Taylor, who was formerly Hon. Secretary, who did so much in first raising the Show to the prominence it now holds in the horticultural world, is again a member of the Council. Appended is a list of the awards with notes of the exhibits.

In the A Division, which was open to all, for four plants, distinct, there were four competitors. Mr. Neil Black, gardener to Misses Pease, Southend, Darlington, was first and deservedly so. A fine Vanda suavis with eleven spikes and 105 expanded flowers was exceptionally subjected to keen inspection, and therefore warm admiration. This Orchid was a credit to the skill of Mr. Black. The other plants were a fine specimen of Rhododendrons Countess of Haddington and Veitchianum, and Erica Cavendishiana. Mr. J. Smith, gardener to T. Lange, Esq., Heathfield House, was second, with Rhododendron fragrantissimum and Imantophyllum miniatum. Mr. J. McIntyre, gardener to Mrs. G. Pease, Woodside, Darlington, was third, the best plants being Azalea Charles Eckbaute and Anthurium Andreanum. Azaleas were next, and were excellent examples of careful training, well flowered, and not too formal. Mr. J. McIntyre was first for four plants, showing Oswald de Kerchove, Marquis of Lorne, Duc de Nassau, and the white Daphne.



Mr. J. Smith was second with good plants, *Souvenir de Prince Albert* and *Duc de Nassau* being the best.

For the best three Orchids the competition was better than it has been at Newcastle before. Six exhibits were staged. Mr. J. Wood, gardener to E. Hopper, Esq., Morpeth, was first with *Dendrobium densiflorum* (eight spikes), and *Dendrobium Dalhousianum* (ten spikes), and *Cymbidium Lowianum* with thirty flowers. Mr. Thos. Wheeler, gardener to C. Mitchell, Esq., Jesmond Towers, was second with *Dendrobium nobile* 2 feet across and *Dendrobium thyrsiflorum*, and *Cymbidium eburneum picta*, the latter a well grown plant, the foliage faultless, and bearing eleven flowers; the back of the petal was slightly flaked with rose. This plant was very much admired by Orchid connoisseurs. Mr. J. Smith was first with Palms, *Kentia Fosteriana*. *Dielytra spectabilis* was fresh and highly coloured. *Deutzias* were also fine. Mr. J. Punton, gardener to T. Hodgkin, Esq., Benwell Dene, was first. In *Genistas* Mr. T. Park, 29, North Terrace, Newcastle, was first; and Mr. J. Charlton, gardener to N. A. Ritson, Esq., Jesmond Gardens, was first for six *Spiræas*. *Cinerarias* were superb, the flowers large, well shaped, and defined in colour. Mr. G. McDougall, gardener to Howard Pease, Esq., Arcot Hall, Dudley, was awarded the first prize, Mr. T. Wheeler was first with *Cyclamens*; and Mr. W. R. Armstrong, nurseryman, Newcastle, first for *Lily of the Valley*, and also first for six fine plants of *Keen's Seedling Strawberry*.

The table plants were keenly competed for, Mr. J. McIntyre being placed with plants an equal height and thickness. *Croton Tortilla*, *Aralia Veitchi*, *Cocos Weddelliana*, *Dracæna superba*, and *Pandanus Veitchi*, and all draped with *Panicum variegatum*; Mr. J. Morris second; and the third prize collection, shown by Mr. T. Wheeler, contained the new *Dracæna* Mrs. Laird in good colour.

*Auriculas* have in recent years formed an important feature of this Exhibition, and there are now many growers in the north devoting their leisure hours to the cultivation of this interesting spring flower. For twelve *Auriculas* not less than nine varieties, *Alpines* excluded, Mr. R. Patterson, gardener to Mrs. Backhouse, Ashburne, Sunderland, was first, as has been the case since he commenced to exhibit at this Exhibition. Mr. Dodwell eight pips, *Black Bess* seven pips, *Heatherbell*, *George Lightbody*, *Acme*, and *George Rudd* were amongst the best of his flowers. Mr. T. E. Hay, Killingworth, was second; *Trail's Beauty*, *Acme*, *George Lightbody* were the best flowers of this old *Auricula* exhibitor. For six *Auriculas* and four Mr. T. Patterson was also first, and likewise for one green edged, one grey edged, white edged and self, he secured the same position. The *Alpines* were very good, the *Fancy* ones a fortnight earlier would have even been better, as the hot, strong sun has told upon them for colour. For twelve *Alpine Auriculas*, Mr. G. Lee, gardener to H. B. Watson, Esq., Millfield House, Newcastle, was first.

For one *Alpine Auricula* Mr. J. E. Hay was first, and for one *Auricula* seedling, equal to those in commerce, Messrs. J. Thompson and Son, Newcastle, were first. Gold laced *Polyanthuses* were well shown, Mr. J. Ellison being first with *Buck's William IV.*, *Formosa*, *Favourite*. Mr. R. Willis, Albion Row, Shankhouse, was second; and Mr. J. Cawthorne third. For a gold laced *Polyanthus* and for a seedling equal to those in commerce Mr. J. Ellison was also first.

With twenty-four *Hyacinths* there were five competitors. Mr. W. J. Watson, nurseryman, Fenham, Newcastle, was first. Owing to the season the *Hyacinths* were not so good as on former occasions, although creditable examples of skill were staged. For twelve *Hyacinths*, J. Hood & Co., florists, West Parade, Newcastle, were first, showing good blooms. Mr. W. J. Watson was second. Mr. G. McDougall was first for nine pots of single Tulips, and also first for six pots of double Tulips. For six pots of *Polyanthus Narcissus* Mr. W. J. Watson was first, and Mr. T. Wheeler second. For six pots of *Daffodils* Mr. T. Wheeler was first.

For cut *Camellias* Mr. Wm. Blackwood was first. For twelve *Rhododendron* bunches Mr. J. Wood, Morpeth, was first; Mr. Blackwood also scoring for *Azaleas*. *Roses* made a splendid show, *Maréchal Niel*, shown by Mr. A. J. Badenoch, Ponteland, securing the first prize.

*Pansies* were also an interesting exhibition, considering the season. Seven collections of Show *Pansies* were staged, and eight of *Fancy*, Messrs. T. Oliphant and J. Gardner being the respective winners.

*Drawing-room epergnes* were, as usual, numerous, and strongly competed for. Five were staged, all possessing commendable merit. Mr. G. Webster, Sunderland, was first; the arrangement was very perfect, the upper tiers were light and the base not too large. Mr. T. Pattison was second with an epergne where *Cattleyas* played the important part. Messrs. Perkins & Sons, Coventry, were first for bridal bouquets, and also for a hand bouquet containing the usual flowers. No less than fifteen ladies' sprays were staged, Mr. J. McDougall winning with an arrangement of dark *Roses*, probably *Sultan of Zanzibar*, and *Adiantum gracillimum*. Mr. Dougall is a new exhibitor and a young man, and his exhibit in every respect did him credit. The second prize exhibit, by Mr. F. Edmondson, was very good, and contained *Odontoglossum grande* and other choice Orchids. No less than twenty-five buttonholes were staged. Mr. T. Pattison was first with *Odontoglossum grande* and *Euphorbia splendens*, all neatly backed up with *Adiantum gracillimum*.

The B Division was open to all, nurserymen excepted. Messrs. J. McIntyre, J. Smith, Geo. Corbett, J. Punton had winning *Azaleas*, *Acacias*, *Dielytra spectabilis*, *Deutzia*, and *Spiræas* in the order named. For six *Cinerarias* Mr. T. Wheeler was first, and for *Primula sinensis* Mr. Larke was first. Bulbs in this class were very good, Mr. G. McDougall winning the twelve *Hyacinths*, which were excellent, included *La Grandesse*, *Koh-i-noor*, *Mont Blanc*, and *Giganteus*. The former

exhibitor was also first for six pots of single Tulips, three in each pot, and also first for double Tulips.

Cut flowers and table decorations were an important feature of this class, and quite equal to those in the open class for nurserymen. Seven drawing-room epergnes were exhibited. Mr. J. Battensby, Swallowwell, was first with the usual flowers used, the upper and second tiers of the Marsh stand, but the base rather heavy in comparison. Miss Edmondson and Miss Oliphant were second and third each.

Hand bouquets were also well shown. Amongst six staged Mrs. J. Jennings was first; only white and dark *Roses*, *Lily of the Valley*, with *Maidenhair Fern* were used. This caught the eyes of the Judges, and had a most pleasing effect, although more valuable flowers were in many of the others.

Some fine stands of spring blooming plants were shown by Messrs. John Hood & Co., Elswick Road, Newcastle, and Mr. H. H. Hillar, florist, Darlington; Messrs. W. Flynn & Co., 3, Stockton Road, Sunderland, stands of seeds; and Mr. W. R. Armstrong, Benwell.

The arrangements for the Show by the Committee were excellent. The staging was done by Mr. J. Hood, jun., of Elswick Road, Newcastle, who carried his work out in a very able and practical way; this work was hitherto done by the Committee, but the above arrangement has been found to answer much better. The late Secretary since entering the Newcastle Council has retired and is succeeded by his nephew, Mr. J. G. Gillespie, B.A., LL.D., and must have been most gratifying to him the success that has attended the first exhibition he has supervised.

## ROYAL BOTANIC SOCIETY.

APRIL 26TH.

THE second spring Show of the Royal Botanic Society was held in the gardens at Regent's Park on the above date. Beautiful weather prevailed, and the Exhibition was of a bright and diversified character. The competitive classes were well filled, and there were some fine miscellaneous exhibits. *Roses*, as are reported below, were well represented, and in consequence much admired by the numerous visitors. The same may be said of hardy plants, and the groups of flowering and foliage plants, the latter forming quite a feature in the Exhibition.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, had a splendid group of flowering shrubs and miscellaneous plants. This comprised *Azaleas* in variety, *Cystisus Scoparius Andreanus*, *Acers*, *Wistaria sinensis alba*, *Andromeda speciosa cassinefolia*, *Liliums*, and *Spiræas* (large silver medal). Messrs. Veitch also had a box of *Streptocarpus*, a pan of *Vriesia McCrei*, and *Strobilanthes Dyerianus*. Messrs. W. Cutbush & Sons, Highgate, sent plants of *Little Gem Calla*, *Leschenaultias*, and *Abutilon Souvenir de Bonn*. Messrs. J. Laing & Sons, Forest Hill, S.E., staged a magnificent group of flowering and foliage plants, including a new *Caladium* named *Ibis Rouge*, and *Louis Van Houtte*, and *Calla aurata* (silver medal). Messrs. J. Peed & Sons also sent a well arranged group of stove and greenhouse plants tastefully arranged (silver medal). These groups were arranged in the corridor, and being in such a conspicuous position, naturally attracted attention.

*Roses* were splendidly shown by Messrs. W. Paul & Sons, Waltham Cross, the plants being excellently flowered. Half a dozen boxes of cut blooms were also sent by this firm, the flowers being fresh and delightfully fragrant. The *Tea Rose Corinna* was most conspicuous in this exhibit (large silver medal). Messrs. G. Paul & Sons, Cheshunt, likewise had *Roses* and a new dwarf *Canna* named *Primrose* (small silver medal). Messrs. Hugh Low & Co., Clapton, were represented by a group of hardwooded plants (silver medal); and Messrs. J. James and Sons, Slough, sent well-flowered *Calceolarias* (small silver medal). Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, had a grand group of single and double *Begonias* in pots (silver medal). Mr. Ware also had some yellow *Carnations* named *Pride of Britain*, *Tree Pæonies*, and other border flowers (small silver medal). Mr. A. Knowles, Horsell Nursery, plants of *Daphne cneorum majus* (bronze medal). This is a very dwarf growing form with small pink flowers very sweetly scented.

Mr. G. Perry, gardener to J. C. Tasker, Esq., Brentwood, had a group of pot *Roses* and *Cannas*, all well flowered (silver medal). Messrs. H. Lane & Sons sent the *Azaleas* which were shown at the Drill Hill (bronze medal). Mr. J. Pike, South Acton, a small group of *Carnation Uriah Pike*. Messrs. Peter Barr & Sons, Long Ditton, staged a collection of *Narcissi* and hardy cut flowers (large bronze medal), and a number of mixed Tulips (bronze medal). Mr. J. Walker, Thame, had *Maréchal Niel* blooms and *Zonal Pelargonium* (bronze medal). The *Roses* were richly coloured, and the *Pelargoniums* were exceedingly bright.

Messrs. G. Paul & Sons were first for six pot *Roses*, showing grand plants of *Alphonse Souperet*, *Violette Bouyer*, *Baron N. de Rothschild*, *Céline Forestier*, *François Levet*, and *Heinrich Schultheis*. Mr. W. Rumsey, Waltham Cross, was second, who also had a grand collection of *Roses* in the miscellaneous classes (silver medal). Mr. R. Scott, gardener to Miss Foster, The Holme, Regent's Park, secured first prize for six *Clivias*, the same exhibitor being also first for six *Dielytra spectabilis*. Mr. J. Douglas was first with twelve *Amaryllises* and nine *Cinerarias*. Mr. T. S. Ware was awarded first prize for twelve *Begonias* and twelve pans of *Primula Sieboldi*, and for a collection of herbaceous plants. The *Primulas* made a rich display, the plants being covered with blooms of various shades, and the hardy plants made a most interesting feature.

Mr. Scott secured first prize for twelve greenhouse *Azaleas*, showing



well-flowered plants. Mr. Eason, gardener to B. Noakes, Esq., Highgate, was second; and Messrs. J. Peed & Sons third. Mr. Scott was also first for twelve Spiræas; Mr. W. Morle, Fenchurch Street, E.C., being second; and Messrs. J. Peed & Sons third. Mr. Morle was first with twelve pots of Mignonette; and Mr. A. White, Stanmore Park, second.

Alpine Auriculas were best shown by Mr. C. Turner, Slough, in the class for twelve plants, Mr. W. L. Walker, Reading, being second, and Mr. J. Douglas third. Mr. Douglas was first, however, for twelve plants of various types; Mr. A. J. Sanders, gardener to Viscountess Chewton, being second. Messrs. C. Turner secured a silver medal, and J. Douglas a bronze medal for a group of Primulas and Auriculas. These exhibits comprised all the leading varieties, and the plants were shown in grand condition.

Messrs. G. Paul & Sons were first for a collection of alpine plants, and the Guildford Hardy Plant Nursery Company second. Messrs. Paul's plants were in pans, whilst those from Guildford were tastefully arranged in baskets, and staged thus excited much interest.

Certificates were awarded for Auricula Engineer shown by Mr. C. Turner and Mr. A. J. Sanders; Carnation Uriah Pike, Mr. J. Pike, South Acton; Azalea Raphael de Smet, Messrs. H. Lane & Son; Iris Hellæa, Mr. T. S. Ware; Auricula Tonjours Gaie, Mr. J. Douglas; Azalea Anthony Koster, Strobilanthes Dyerianus, Lælio-Cattleya Ascania, Lælia Latona, Vriesia Morreni, and Wistaria sinensis alba, Messrs. J. Veitch & Sons; Caladium Louis Van Houtte, Messrs. J. Laing and Son; Stanhopea Amesiana, Messrs. Hugh Low & Co.; Double Begonia, Miss Jennie Fell, Mr. T. S. Ware.

### ROYAL METEOROLOGICAL SOCIETY.

At the last monthly meeting of this Society, Dr. C. Theodore Williams, President, in the chair, Dr. R. L. Bowles, Miss E. Brown, Dr. W. C. Falls, Mr. R. Lamont, and Mr. A. R. M. Simkins were elected Fellows of the Society. The following papers were read:—

1, "The Direction of the Wind over the British Isles, 1876-80," by Mr. F. C. Bayard, F.R.Met.Soc. This is a reduction on an uniform plan of the observations made twice a day, mostly at 9 A.M. and 9 P.M., at seventy stations during the lustrum, 1876-80, and the results are given in tables of monthly and yearly percentages.

2, "Notes on Two Photographs of Lightning taken at Sydney Observatory, December 7th, 1892," by Mr. H. C. Russell, F.R.S. These photographs were taken with a half-plate view lens, mounted in a whole-plate camera, and as a matter of course there is some distortion at the edges. Both photographs show the gaslights in the streets as white specks, the specks being circular in the centre and crescent-shaped in other parts of the plate owing to distortion. The lightning flashes are also distorted. Mr. Russell believes that this distortion may account for the so-called "ribbon" flashes which are seen in many photographs of lightning. He has also made some measurements of the length and distance of the flashes, and of the intensity of the light.

3, "Notes on Lightning Discharges in the Neighbourhood of Bristol, 1892," by Dr. E. H. Cook. The author gives some particulars concerning two trees in Tyntesfield Park which were struck by lightning, one on June 1st, and the other on July 18th, and also some notes concerning a flagstaff on the summit of Brandon Hill, which was struck on October 6th.

4, "Constructive Errors in Some Hygrometers," by Mr. W. W. Midgley, F.R.Met.Soc. The author, in making an investigation into the hygrometrical condition of a number of cotton mills in the Bolton district, found that the mounting of the thermometers and the position of the water receptacle did not by any means conform to the regulations of the Royal Meteorological Society, and were so arranged that they gave the humidity results much too high. The Cotton Factories Act of 1889 prescribes the maximum weight of vapour per cubic foot of air at certain temperatures, and the author points out that if the instruments for determining the amount present in the mills have an error of 20 per cent. against the interests of the manufacturer it is necessary that the makers of the mill hygrometers should adopt the Royal Meteorological Society's pattern for the purpose.

### GRAFTING: DOES THE WOOD OF THE STOCK AND SCION UNITE?

THE Journal for the 6th inst. contains a letter (page 272) from Mr. H. Dunkin, putting the question, Does the wood of the scion and stock unite? Your note to the letter bears that no union of the heart-wood takes place.

Ten or twelve years ago I had occasion to take up two standard Morello Cherry trees grafted on the Mahaleb stock, they were a little over twenty years of age. A section was made through the graft, which apparently shows the wood to be quite solid, both before and after the graft. I have sent you one of the sections to enable you to judge for yourself. The other half of the stem was sent some years ago to the Museum of the Botanic Gardens in Edinburgh at the request of the Curator.—M. G. F.

[The section of grafted Cherry wood which we have received is a very handsome one, having a diameter of 6 inches below and 4 inches above the point of union between the stock and the scion. It illustrates

clearly how, despite the organic incorporation of the two, the character of each wood remains distinct on both sides of the line of grafting. We cannot admit, however, that there is organic incorporation to the very centre, or, as our correspondent expresses it, "that the wood is quite solid *before* and after the graft." It is certainly solid enough after the graft, as the 3 inches of compact timber on each side of the grafting scar testify. So great, indeed, is this in its amount and its power of compression that it reduces to insignificance the original heart-woods of the scion and the stock. They can still, however, be discerned merged in a brown cicatrix at the centre, but it is a mechanical approximation merely, and preserved by the constrictive force of the superadded rings of new wood. Were these removed the original heart-woods would fall asunder of themselves, as they are decayed and penetrable by a sharp

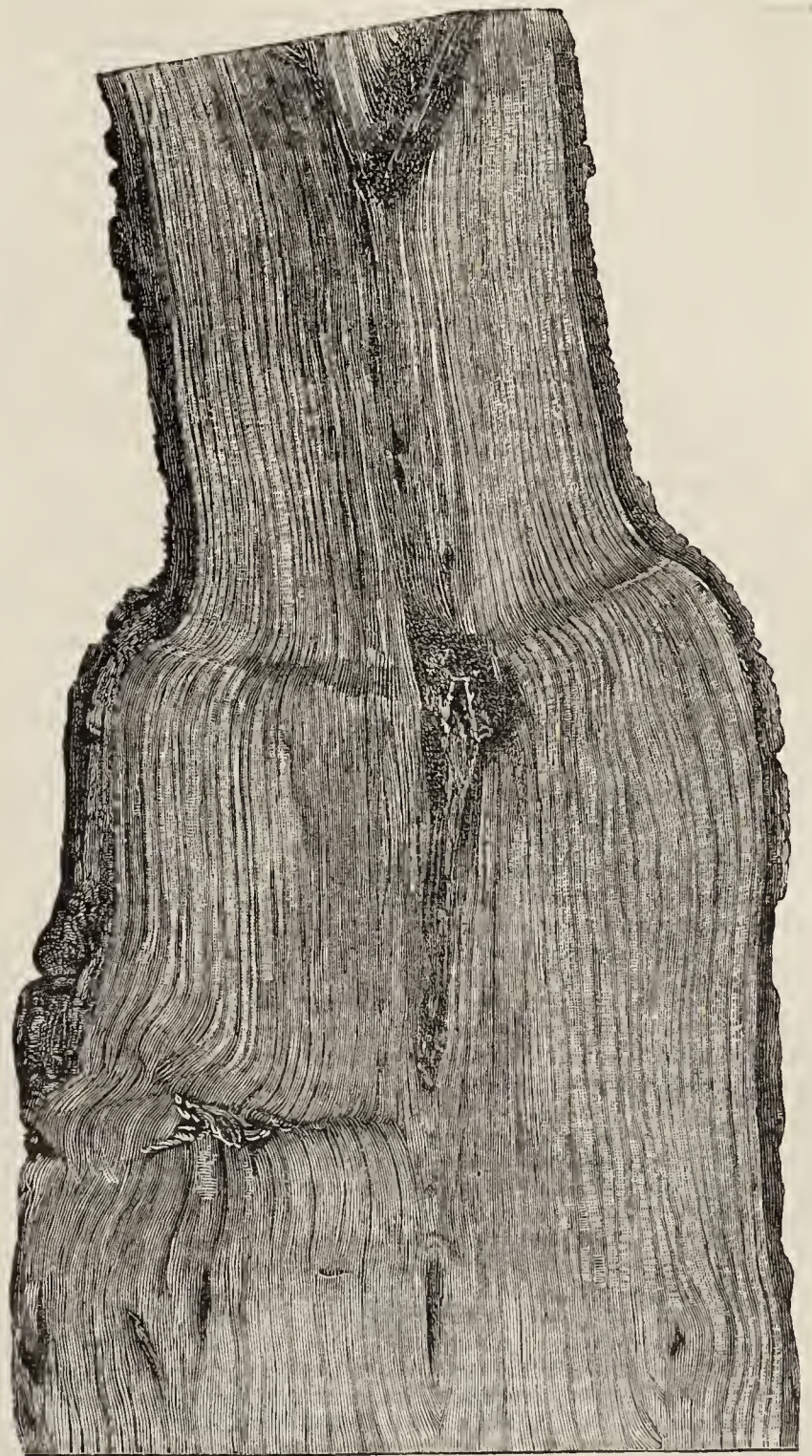


FIG. 64.—SECTION OF A GRAFTED CHERRY.

pointed instrument. From this we are justified in reasserting our conviction that, though there may be some union between the woods of the stock and the scion, it does not extend beyond the softer outlying portions which merge into the alburnous layer, and that the heart-woods remain distinct and ultimately degenerate as their vitality expires. The illustration (fig. 64) is from a photograph (reduced) of the section above referred to.]

### TRADE CATALOGUES RECEIVED.

G. Bunyard & Co.—*Hardy Herbaceous Plants, Pot Roses, Bedding Plants, &c.*

E. H. Krelage & Son.—*Herbaceous Irises.*

G. Phippen, 108, Broad Street, Reading.—*Bedding Plants and Dahlias.*

Toogood & Sons, Southampton.—*Farm Seeds.*

B. S. Williams & Son, Victoria and Paradise Nursery, Upper Holloway.—*New and General Plants.*





## FRUIT FORCING.

**Vines.**—*Early Houses.*—A dry atmosphere in result of incessant firing and the necessity of withholding the customary dampings when the fruit is advanced in ripening encourages red spider, and, as this pest spreads with alarming rapidity where it obtains a footing under such conditions, prompt steps must be taken against it. Water is undoubtedly the best preventive of red spider; but the application of water to Vines by the syringe, even when clear soft water is used, is destructive of the bloom, and in some cases leaves a deteriorating mark where the water hangs on the berries. If a sharp look out is kept on the foliage, and whenever the smallest patch of brown appears to be caused by red spider, and the part is carefully sponged with a soft soap solution, 2 ozs. to a gallon of water, the pest will be prevented from spreading. The Vines will be kept in health until after the crop has been removed, when recourse can be had to insecticides, and the eradication of the insects by syringing. As future crops depend upon the preservation of the foliage in health, early attention to this work is imperative. Where Grapes are swelling a careful examination of the border should be made, and if the inside or outside borders (the latter, in some cases, being unusually dry for the time of year through the prolonged drought) are dry, a liberal application of tepid liquid manure will be a powerful aid to the Vines and inimical to red spider.

Grapes now colouring will require abundance of warm air by day and night, with plenty of moisture on the paths, walls, and border, but avoid keeping the latter constantly saturated. Gradually reduce the night temperature as the berries ripen, keeping the atmosphere cool and rather dry, yet not arid, for the Grapes will keep better with moderate air moisture, provided it is not stagnant, the temperature being kept at about 60° at night. The soil also must be kept in a moderately moist condition, early Vines requiring much more water after the fruit is ripe than late ones. If fermenting materials have been employed on outside borders, remove them gradually, leaving a light mulching only of the most suitable, the partially decayed, for the protection of the surface roots, and allow them to have exposure to the summer rains, which will wash in the fertilising elements of the mulching and promote root action, stimulating the Vines into the production of new laterals after they are relieved of the crop, these preventing the premature falling of the foliage and consequent starting of the principal buds.

*Midseason Houses.*—Proceed with tying down the growths, stopping the shoots and laterals, and attend to thinning the bunches and berries. If a large percentage of the surplus bunches were cut off before they flowered there is likely to be a better set of Grapes than where they were left until the flowering is past. Allow an even spread of foliage over the space at command, but avoid crowding, yet the more leaves a Vine has the more food it will assimilate contingent on their being in a position to do so—that is, are fully exposed to light and air. Supply liquid manure to inside borders, also outside when needing moisture, and mulch with a little lumpy manure, renewed from time to time so as to maintain about an inch thickness. Nothing answers better than horse droppings for heavy soil, but they must be sweetened, otherwise the ammonia evolved will be too powerful for the tender foliage of the Vines. For light soil cow manure is better, drying it a little before use, so as to have it rather lumpy, for a close surface prevents the access of air and the food elements are liable to become effete. Ventilate early—a little by the time the sun acts on the house, and increase it with the rising temperature, closing sufficiently early for the latter to rise it to 85° or 90° with plenty of atmospheric moisture, and if there is too great an accumulation of it a little ventilation given at the apex will allow the vitiated air to escape and prevent excessive moisture being deposited on the foliage.

*Late Houses.*—April has been everything the Grape grower could desire—not cold and plenty of sun—and late Vines have started well and are making rapid progress. Disbudding must be attended to, leaving no more shoots than there is room for, not being in too great a hurry in tying down the growths, yet not allowing them to touch the glass, and stopping them to within three or four joints of the fruit. The best time to do this work is the latter part of a fine day when the growths are limp through the evaporation and the warmer and drier atmosphere. Fertilise Muscats and other shy setting varieties every fine day when they come into flower and the “caps” are being thrown off or easily removed, choosing the time when the temperature has reached its maximum and air has been admitted for an hour or two.

*Late Hamburghs.*—Where these have been allowed to start naturally they will be in a condition to require disbudding, tying down, and regulating the growths, stopping not less than two joints beyond the show of fruit—preferably a joint or two more where there is room. Pinch the laterals at one joint below the fruit, above also where the space is limited, otherwise allow them to extend so as to insure an even covering of the space with foliage that can have exposure to light, afterwards keep closely stopped. Commence ventilating early and freely to secure

short-jointed sturdy wood and stout leathery leaves. Avoid a saturated condition of the atmosphere, as that only tends to soft growth, and is further accelerated by a soapy state of the soil. A light mulching of lumpy manure or loam will encourage surface roots, save watering, and in some cases greatly benefit the Vines by causing them to emit roots from the stem at the collar.

*Newly Planted Vines.*—When the Vines have recovered the effects of planting they will grow freely, and therefore aim at a sturdy and short-jointed growth, with thick leathery leaves of a healthy bluish green colour. Take advantage of sun heat to increase the ventilation early in the day to get the food elements well elaborated, aiming more at food stored than an extensive growth; stopping laterals at the first leaf and the cane when it has made 8 or 9 feet of growth, taking every possible care of the main leaves, not allowing them to be interfered with in any way by the laterals. Keep the soil moist, but rather under than over wet, and close early with plenty of atmospheric moisture.

**Melons.**—The fruit in the early house now ripening will require a drier atmosphere in order to secure high flavour, ventilating a little at night, for pent up air does not favour colouring and quality, but is likely to cause the fruit to crack. In houses where the fruit is swelling the night temperature should be maintained at 70°, 70° to 75° by day artificially, ventilating at 75°, increasing it with the heat, and maintaining through the day at 80° to 85° or 90° from sun heat, and close the house about 3 P.M. or earlier, so as to run up to 90°–100° with plenty of moisture. Add more warm soil to the hillocks or ridges as the roots push through their sides, which must be repeated at intervals until the allotted space is filled, pressing it firmly. Young plants must not be allowed to become pot-bound before being planted, or they become stunted and rarely make a free satisfactory growth afterwards. Any that are likely to get into this state should be shifted into pots 2 inches larger in diameter than those they are at present in, so as to keep them in steady progressive growth until the hillocks are got ready for them. Sow seed to raise plants for successive planting.

**Cucumbers.**—Syringe the plants in hot-water heated pits or houses twice a day, so that every part of the foliage may be kept free of red spider, but it must be done without damaging the leaves, which are very brittle and easily injured. Plants in full bearing require liberal and frequent applications of liquid manure at a temperature about the same as the bed, but do not supply it so as to cause a soft growth. Avoid crowding and overcropping. Use no more fire heat than is absolutely necessary, yet the temperature must be maintained at 65° to 70° at night, and 70° to 75° by day artificially, and as the fire heat is lessened less moisture will be required, and must be reduced accordingly. Attend to the necessary stopping, thinning, and tying of the shoots, keeping up a succession of fruitful growths. Straight fruit are finer looking than crooked; where the first are in request the fruit should be placed in glasses as soon as fairly set and the flower kept on, or three pieces of board nailed together so as to form an open-ended trough, make a good substitute. Make sowings or plantings as necessary to maintain a supply of fruit exceeding rather than unequal to the demand.

Plants in pits and frames should be frequently seen to for the regulation of the growths, keeping them rather thin, stopped one joint beyond the show of fruit, and removing bad leaves as they appear. A sprinkling at closing time will be sufficient for these plants, not allowing them to suffer through lack of moisture at the roots, nor supplying water until it becomes necessary, for a sodden soil is destructive to the roots and induces canker and gangrene, which sometimes affects the fruit and renders it unwholesome. Ventilate early, increase it with the heat, and close early in the afternoon so as to maintain a good temperature well into the night. Attend to the linings, taking care to avoid rank steam getting into the frames or pits, and employ covering over the lights for some weeks longer, or until the weather becomes so warm that the night temperature of the frame does not fall below 65°.

## THE KITCHEN GARDEN.

**Brussels Sprouts.**—If this important crop is liable to fail early, then ought more seed to be sown in the open; these late-raised plants, duly put out in good ground, frequently producing excellent late sprouts. All raised under glass ought to be pricked out about 4 inches apart on somewhat sheltered borders, the soil of which has been well pulverised. Exceptions may be made to this general rule in favour of any raised rather late and thinly; these, if not unduly coddled, being quite strong enough to be dibbled out where they are to remain for the season. The latter is the least laborious plan, as those pricked out have to be transplanted with a trowel the next time they are moved. Brussels Sprouts pay well for liberal culture, and should have a fairly rich and deep root run, this being made rather firm for them, and the plants be put out in rows, if the varieties are strong growers, 3 feet apart and 2 feet asunder in the rows. On poorer ground, or if the varieties are of a neat habit of growth, Paragon and The Bullet not requiring much room, the distances may be 30 inches and 18 inches respectively. The usual practice, however, is to dispose them between early Potatoes widely planted directly the latter are moulded up.

**Early Broccoli.**—A good batch of these, notably Veitch's Autumn Protecting, should be raised under glass, and treated in every way similarly to Brussels Sprouts, only given rather less room, the rows being 30 inches apart and the plants 2 feet apart in the rows; or these may also be grown between widely arranged rows of Potatoes. There is no such thing as making these early Broccoli really frost-resisting, but they are of the greatest value for lifting and storing under glass, and therefore should be grown most extensively and well. If sufficient



plants of the variety named are put out a good supply of hearts of superior quality can be had from the time autumn Cauliflowers are over till February, always supposing ample protection from frost is afforded. Late-raised plants, or any obtained by sowing seed in the open during April or the first week in May, not unfrequently prove exceptionally profitable at midwinter and later.

**Cauliflowers.**—Those put out under hand-lights, and also quite in the open and roughly protected, have made good progress, the extra warmth in the soil, coupled with help from the watering-pot, suiting them well. They will be wanted, too, earlier than usual, owing to the Broccoli turning in so rapidly; and liquid manure ought to be given them directly they shows signs of hearting. This will expedite growth, and also considerably increase the size of the hearts. Any raised thinly in boxes or beds of soil under glass, and well hardened off, may well be dibbled out where they are to remain, and thus treated are less likely this season to heart in prematurely than will be the case if pricking-out into nursery beds, and then transplanting, has to be resorted to. Not many summer Cauliflowers are wanted, but no mistake is often made in the direction of growing too many plants of the Autumn Giant. Treat plants of this variety that were raised under glass similarly to the Autumn Protecting Broccoli, and if more seed is sown now, the plants obtained will, if planted on good ground in succession to early Potatoes, afford a supply of acceptable late hearts, especially if roughly protected. Eclipse is the only other variety worthy of being sown at this late date, and grown alongside the Autumn Giant will heart in from ten days to a fortnight earlier than that old favourite.

**Borecole.**—There is no necessity to raise any of these under glass, or in many cases very early in the open. Instead of sowing seed thickly in beds and either pricking out the seedlings or allowing them to stand about long enough to become very leggy before they are put out, the wiser plan is to sow the seed late in April or early in May thinly in drills and well in the open. By the time the plants are fit to set out the sites are usually ready for them. Read's Hearting, though not particularly hardy, ought always to be grown owing to the very superior quality of the hearts, while the Asparagus Kale is worthy of being cultivated owing to its hardiness, good quality, and productiveness late in the spring. The last named answers well when sown during May in drills where the plants are to remain. The drills need be no more than 20 inches apart, and the plants may be left rather thickly in the rows.

**Midseason and Late Broccoli.**—The remarks anent sowing Borecole too early also apply with even more force to midseason and late Broccoli. Unless early raised plants can be put out quickly they soon become drawn, and leggy plants are the worst to deal with and the first to succumb to frosts. The end of April or early in May is also the best time for sowing Snow's Winter White Broccoli. Raised and planted out much earlier the plants are liable to attain a great size and produce nothing but quite worthless hearts. In each and every case open drills rather thickly, well moisten them if at all dry, then sow the seeds thinly and level over. The seed will germinate quickly this season, and serviceable plants be had without much further trouble. If birds are troublesome either roll the seeds first in a damp cloth and then in powdered red lead prior to sowing, or else net over after they are sown. Slugs and the Turnip flea should be kept off by means of occasional dustings over of the tiny seedlings with a mixture of soot and lime.

**Chou de Burghley.**—This, again, is liable to grow far too rankly to be serviceable when raised and put out early, but if the seed is sown in the open now, and there be no undue delay in getting out the plants, Chou de Burghley will be found one of the best winter vegetables that can be grown. The other "hybrid" Cabbages may be similarly treated.

**Savoy.**—These rank among the most popular of winter vegetables, especially if not grown too strongly, extra large close heads not being nearly so much appreciated as those smaller and not so close and blanched. Raising and planting early is also very likely to result in most of the varieties being ready for use long before they are wanted, spoiling accordingly. If Tom Thumb, Dwarf Ulm, Dwarf Green Curled, and Drumhead Savoy are sown now, and the seedlings receive fair treatment, the first-named will be ready for use quite as soon as usually required, and the rest will afford a good and long succession.

**Other Seeds to be Sown.**—The Extra Early Milan Turnip succeeds well on a south border, but in order to have the milder and more tender Snowball and Veitch's Red Globe good, these ought to be sown either on an east border or on ground partially shaded by fruit trees and bushes. Now is a good time to sow Carrots in variety, and also Beet, Chicory, Salsafy, and Scorzenera. All form the cleanest and straightest roots when sown on freely working ground, well manured for the previous but not these crops, contact with solid manure causing the tap roots to fork. The rows of Horn Carrots should be 10 inches apart, the other varieties 12 inches, while 15-inch distances are suitable for all the other kinds named.

#### PLANT HOUSES.

**Ericas.**—Pot any plants of *E. hyemalis* that have started freely into growth and that need more root room. Drain the pots well, and use for a compost good peat and coarse sand. Do not disturb the old ball further than is necessary to remove the drainage. The soil should be pressed firmly round the ball so that water will not pass through the new material and leave the old dry. After potting place the plants on moist ashes in cool frames. Give abundance of air daily, so that they will make a firm sturdy growth. Water carefully at first, and keep the plants moist as long as possible before giving them water at their roots

by gentle syringings and amongst the pots. Give the plants light shade for the first ten days or a fortnight after repotting them.

**Epacris.**—Repot plants that need more root room if they are in a healthy condition. Similar compost should be used in potting these plants as is needed for *E. hyemalis*. If the plants have been grown in cool quarters they may be placed in cold frames, but they do best when encouraged to make their growth by closing the frame early in the afternoon, syringing at the same time. Directly these plants are rooting freely in the new soil more air should be given them, so that their growths are firm and sturdy. It is a mistake to shade too long or to grow the plants in a close confined atmosphere.

**Hardwooded Heaths.**—All plants that need tying should be attended to without delay. Do not use more stakes than are absolutely necessary. Water with care, but do not allow these plants to become dry at their roots. Any plants that are required to flower late may be retarded by placing them in a cool airy house with a northern aspect. Young plants should have strong growths that are taking the lead drawn towards the rim of the pots so that the weaker ones will gain strength. Any flowers that show on these young plants should be removed at once if the object is to grow them as rapidly as possible.

**Azaleas.**—Remove the seed pods from Azaleas as they go out of flower, and place the plants where they can be kept close and moist to induce them to make a good growth. These plants, if they need more root room, may be repotted now. They do well in good peat and coarse sand, or may be grown satisfactorily in leaf mould that has not been heated and fibry loam, with a liberal addition of coarse sand. Material of this nature must be free from worms, and pressed firmly into the pots. Before potting, examine the plants carefully, and if infested with thrip syringe them at once with a solution of tobacco water.

**Camellias.**—Shade, where practicable, all plants that are making their growth. Give them liberal supplies of water at their roots, and maintain a moist atmosphere. Any that are confined at their roots in pots or tubs should have weak stimulants every other time they need water. Soot water in a clear state will prove very beneficial.

**Cytisus racemosus.**—Plants that have flowered may be cut close back, and when they have broken into growth, repotted, if they need more root room. These plants do well in good fibry loam and sand; if the former is poor one-seventh of decayed manure may be added. Place the plants in cold frames, which may be closed early in the afternoon until the former start into growth, when abundance of air should be given them. Pinch the shoots of young plants to induce them to branch, and pot them if they need more root room.

**Coronilla glauca.**—Place young plants in cold frames and ventilate freely. If they need more root room put them into larger pots; the compost advised for Cytisus, with the addition of a little leaf mould, will suit them well. Pinch the shoots to induce them to branch, and continue to do so if any display signs of taking the lead. Syringe freely, because this plant is very liable to be attacked by red spider.

**Callas.**—Put young plants into 5-inch pots, and grow them cool, so that they will be ready for planting out soon and thus produce an early batch of flowers. Plants that are flowering feed with weak stimulants every time they need water, but those that have done flowering may be hardened and stood outside to rest.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### CORRESPONDENCE.

THE extremely fine weather on the 19th and 20th, when the night temperature was 48°, and the day temperature 72° and 73° respectively, has put action in bee-keepers as well as bees, the latter working as if it was midsummer, and the former examining stocks and making inquiry about them and their management.

"A Yorkshire Bee-keeper" sends me a queen to see if I can unriddle the cause of her laying eggs that produce drones only. The queen is evidently one of 1892, and owing to the extremely low temperatures of that year, she, like many others, never mated. I am in receipt of nearly a dozen letters of a similar nature.

#### PUNICS.

The writer of another letter says, "I have had to put on a second super to a stock of Punics, the first being nearly full of honey, drones flying, and everything just now like June. I am satisfied pure Punics are in no way inferior to hybrids." I hope other persons having their bees pure or crossed will send in reports.

#### DRONE-BREEDING QUEEN AND UNFED HIVES.

About the middle of April I observed many bees issuing from one hive with drone seals between their mandibles. It appeared a strong hive, and in a normal state; but that did not satisfy me, and an inspection was made. Two divisions of a storifying Lararkshire hive were well filled with bees, and every available drone cell had its egg, larvæ, or pupa, and there were moreover many



queen cells in their various stages, but, of course, containing drones only. I at once made a search for the queen, and removed her, knowing at a glance she was a virgin, throwing her carelessly upon the alighting board until I arranged the hive, then found her in the lower division. Had I been a novice, or a pupil under the modern school, could the inspection of that hive done other than prompted the following questions:—Am I being misled? how comes all this brood in these hives without stimulative feeding? why any bees at all? and how is it possible that in the clusters of queen cells raised the queen regnant could have deposited eggs in them?

In one hive the brood for queen-rearing was taken from a Punic prime swarm of 1892 completely filled with brood, newly gathered honey, and pollen; scarcely an empty cell, bees and drones hatching in great numbers. A second one in a Stewarton hive of three boxes, ready for supering; and the third one, the drone breeder; neither of them having been fed, yet they are full of brood, and overflowing with young bees, as are most of my other hives. It must therefore be conceded that my bees are either different from those of the moderns, or are better managed, or that they must acknowledge that "stimulative" feeding is a fad.

Another point, unfertilised queens deposit eggs at first in drone cells, and when these are filled they lay in the worker cell's one egg as regularly as if they had mated. When the bees were few I have witnessed a departure from this, which but proves the rule. On the contrary, fertile workers or imperfect queens incline to lay in worker cells first in an irregular manner, an experienced person being perfectly able by a glance to know which he has to deal with.

The drone breeder was a stock hive having sent off a swarm about the middle of June, 1892, besides having four of its brood combs removed. When inspected the hive had evidently lost few of its bees, which are now nearly ten months old. According to many of our modern bee-keepers they ought to have been dead last August. They will be living months hence.

#### TWO QUEENS IN ONE HIVE.

In addition to the above letters I have several inquiring about the two queens in one hive system, while some writers term it the "Wells" system. I have never observed that Mr. Wells claimed it as his system. It has been so described by others who either knew, or ought to have known, that the system is not, and that it did not originate with Mr. Wells. The foregoing are facts, affording matter for study and reflection.

Working two queens in one hive is at least half a century old. The keeping of stocks on the twin system originated in Scotland as a preservative of bees during winter before the wintering problem was solved. We can with perfect safety, with our system of ventilation winter very weak stocks. For example, a nucleus that was started 1st August last year, with not more than from 300 to 400 bees and brood cells combined, has with only 9 lbs. of sugar wintered, and is doing well. Bee-keepers, therefore, need not be apprehensive for the safety of their bees during severe winters when our instructions have been carried out.

The telescopic and convertible Lanarkshire hive, lately explained, was specially made for working two queens in one hive, but it had its drawbacks in some respects; it was unsuitable for moving to and from the Heather, although it was easily converted into a storifier. How much more unsuitable then for that purpose will a one-storeyed hive large enough for two prolific queens be? The bee-keeper to be successful ought to be prepared for every contingency. Huge hives tenanted with two queens are sure to swarm. When the bees of both queens are allowed to intermix indiscriminately extra hives must be in readiness.

With two Lanarkshire storifying hives in full strength a little before the commencement of the honey flow, and a little precaution to have both lots of bees gorged, they and the combs are united into one hive, with the exception of a nucleus, if desired, for raising, or rather nursing, a future queen. The young bees, after the two hives are joined, will be hatching from the cells in a greater ratio than the queen regnant can replace with eggs. These are simply the outlines of a system long and successfully practised. It must also be borne in mind that the advantage is not always on the side of the strong hive. In a poor honey season like 1892 the stronger the hive the less the honey. I can speak advisedly upon the subject and system I have so long practised; therefore, nothing is tentative with me, as it is with those who are claiming to be the diffusers of a "new" system.—A LANARKSHIRE BEE-KEEPER.

#### EARLY SWARMING.

THINKING it may interest some of your readers who are interested in bees, I can say that on April 21st I had a good swarm

of bees from an old-fashioned straw skep. As it is far earlier than ever I had one before in my experience of over forty years of bee-keeping, I thought it might interest someone.—A. ALDRIDGE, *Manor Farm, Petersham.*



## TO CORRESPONDENTS

\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Calceolarias Diseased (G. F.).**—The disease is of a fungoid nature, and some varieties are more liable to injury than others. The plants sent have been much overcrowded, favouring the affection. Wednesday morning's letters can only be answered briefly, if at all, in the current issue.

**Definition of a Cottager (B. and D.).**—In some districts persons who do not pay more than a given amount in rent, and in others those who do not receive more than a stated amount in wages, are regarded as cottagers for purposes of exhibiting at shows. The amounts in both cases depend on the custom of localities.

**Culture of Gasterias (J. B.).**—Gasterias belong to the Aloe section of the Lilyworts. They are very neat plants for a succulent collection. They will do well in a house kept from 45° in winter to 60° and more in summer. They flourish best in sandy loam with a little peat and very rotten dry cowdung, and some lime rubbish and broken bricks—say, two parts sandy loam, half a part of cowdung, and half a part of broken bricks and lime rubbish. The chief care they require is to keep them almost quite dry when in a state of rest in winter. If the pots stand on a damp stone or damp gravel they will absorb enough moisture in the dark months.

**The Pistachia Nut (A. L. B.).**—So common and so much esteemed in the south of Europe, is the produce of *Pistachia vera*, a tree about 15 feet high, obtained originally from Syria, but now extensively cultivated in Spain, Italy, the south of France, and Sicily. The fruit is of the size and shape of an Olive, but convex on one side and concave on the other, and with a rougher surface. It has a tender, crimson-coloured pulp, which is rather sparing, and encloses a nut which opens with two valves, disclosing a greenish kernel covered with a red pellicle. These nuts are sweet and agreeable; they enter into the composition of ragoûts and other dishes, and are used for flavouring ices and creams, besides being preserved incrustated in sugar and other forms of confectionery. The best come from Arabia and Syria, but large quantities are exported from Sicily. They are said to be very nourishing and wholesome.

**Destroying Slugs (T. P.).**—The most simple and effectual method with which we are acquainted is to water the beds where the pests are so destructive with lime water; but it must be applied when they are feeding after dark, not when they are hiding in the daytime. A peck of "shells" or lumps of lime will be sufficient for thirty gallons of water, and it should stand to get clear. Slaked or powdered lime is of no use. There are scarcely any plants that will be injured by the lime water; on the contrary, the majority will be benefited by it, especially Box. If a line of moist tar can be spread between the orchard and flowers slugs will not cross it. If you will repeat your question relative to spring-flowering plants, and state whether you require them for growing in pots under glass or for planting in the garden, your letter shall have our attention. The lime water should be applied through a rosed watering pot, and it will destroy all the slugs that are drenched with it.

**Market Prices (M. I. D.).**—You ask "if the Covent Garden quotations given weekly are reliable, and actually obtained by salesmen and commission agents for their customers." The prices are as reliable as can be given for representing the average. The amounts are actually obtained by salesmen who, of course, deduct commission in remitting to the growers. But you must understand that the prices given are not the lowest on the one hand nor the highest on the other. Large consignments of so-called "goods" reach the market that are scarcely disposable at any price, and we have known salesmen send every penny they have obtained to the consigners with an intimation that no further supplies are needed. Some produce is essentially inferior, some is good,



but a week or more too late for insuring the best returns, while no small quantity is good when cut or gathered, but spoiled through bad packing. The very best fruit, flowers, and vegetables that reach the market at the earliest date in faultless condition realise higher prices than those quoted. The prices of perishable articles of necessity fluctuate extremely according to condition, and even produce of good quality falls quickly and considerably in value in an overstocked market. The averages are as fair as can be compiled on the spot; but it may be said that London is not by any means the best market at all times for garden produce of various kinds and necessarily differing quality. Respecting books, "The Pansy," by James Simkins (Simpkin, Marshall and Co.), is good. The price is not recorded in it. We have no work on the other subject in our library.

**Using Sulphate of Ammonia (Amateur).**—This is a very active plant stimulant, but by no means a complete manure. It will make almost everything to which it is rightly applied grow quickly, and will kill almost anything when used in excess. If it is used alone and continuously the soil must eventually become the poorer, because of the abstraction of phosphates, potash, and other ingredients from it through the accelerated growth. An ounce to the square yard is a fairly good dressing, twice that quantity a very liberal one, though we have known it exceeded to some crops without injury. Some soils are much poorer, and consequently need more manure than others. If you can mix twice the quantity of superphosphate of lime with the sulphate of ammonia, and apply at the rate of 2 ozs. to the square yard, you will have a better, cheaper, and more permanently satisfactory manure than by using the ammonia salts alone.

**The Sweet-scented Barbadoes Cedar (N. O. L.).**—*Cedrela odorata* is the Sweet-scented Barbadoes Cedar, a native of the Caribbee islands and Barbadoes. In the West Indies it is simply called "Cedar." The tree is upwards of 80 feet high. The flowers are pale flesh-coloured, and are like those of the Hyacinth; the fruit, bark, and leaves have the smell of assafoetida, but the wood is fragrant and agreeable. The trunks grow to an immense size, and are converted into canoes by merely hollowing them out; some of which, when completed, are as much as 40 feet long and 6 feet broad; and the wood being so soft and light, they carry a great weight on the water. The wood is of a brown colour, with a fragrant odour. It is much used as shingles for covering roofs, and is employed in ship-building, for which purpose it is ill adapted, on account of its liability to attacks from the worm. It is also used for wainscoting of rooms, and to make chests, because vermin do not so readily breed in it as in many other sorts of wood, this having a very bitter taste, which is communicated to whatever is put into vessels made of it, especially when the wood is fresh; and hence it is never made into casks, because the spirituous liquors would extract the resin, and thereby acquire a very bitter taste. In France the wood is employed for covering black-lead pencils, and it is said that the Havannah cigar-boxes are made of it.

**Stove Flowering Plants (J.).**—The *Eucharis* must be encouraged to make good growth; when completed the plants should be gradually kept drier at their roots, and then retarded in a cooler structure. After a good rest, without unduly drying the plants, they may, after introducing them into heat, be had in bloom in a month. The *Allamanda* should be encouraged to grow, for upon the growth made will largely depend the size and quantity of the flowers produced. These plants are practically continuous in their habit of flowering, and after the first growths show flower each shoot will branch again into three or four, which will flower again. Under good treatment and liberal feeding flowers are produced for at least eight months. *Clerodendron Balfourianum* should not be closely pruned back; all that is needed is the removal of the unripe ends of the wood of the previous season. From the time of starting about eight weeks only is required under proper stove treatment to bring the plants into good condition for exhibiting. It is just possible your plant may be too early, or it may not flower satisfactorily if you pruned it hard back, removing the greater portion of last year's wood. If plenty of flowering wood was left do not hurry the growth, and if it advances too early gradually give the plant cooler and more airy treatment. You may safely retard this plant during the month of July without fear of injury. When retarding carefully avoid cold draughts.

**Figs Decaying at the Apex (Delta).**—The fruits are infested with the spot fungus (*Glæosporium læticolor*, B.) It was first noticed on half-ripe Peaches and Nectarines by the late Rev. M. J. Berkeley, and it has been found on Apricots, Cherries, Figs, Grapes, and Plums. Its filaments (mycelial threads) penetrate to the seed or stone, and the flesh decays, in advance of a pale salmon coloured spot or patch, which appears on the surface near the apex or eye of the fruit. This consists of the reproductive bodies (conidia or spores) of the fungus, but they ultimately become brown or black. The fruit, especially Figs, generally falls. This points to the necessity of collecting and burning all attacked fruits. It is believed to be accelerated by a moist atmosphere, the moisture condensing on the fruit, and so causing a softening of the epidermal tissues, if not actual decay, and this leads to attacks of the fungus. It is a question of germs finding a fitting nidus, and it has been found that a little sulphur brushed on the hot-water pipes and a little air admitted constantly, with water withheld from the fruit after it commences ripening, or slightly in advance of that change, act as preventives of the fruit spotting and decaying at the apex. Burn all the affected fruits, withhold water from the others, and maintain a circulation

of warm, rather dry air constantly. The feeding and syringing would aggravate the evil; in fact, the fungus almost invariably attacks the finest fruits, and, as a rule, those that should be the first to ripen.

**Names of Fruits.**—*Notice.*—Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (H. H.).—A good and well kept fruit of Golden Noble.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and fern fronds should bear spores. Specimens should arrive in a fresh state in fern boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (G. A. C.).—*Triteleia uniflora*. (A Subscriber).—Probably *Doronicum caucasicum*; specimen insufficient. (X. Y. Z.).—An *Erodium*; specimen too withered to identify species. (A. M.).—*Adiantum pedatum*. (H. T.).—*Arpophyllum spicatum*. (F. D.).—*Ansellia africana*. (L. E. G.).—*Woodwardia angustifolia*. (H. E. M.).—The parcel arrived as flat as a pancake, and the contents crushed. We can discern No. 2 as *Streptosolon Jamesianum*, but cannot identify No. 1.

#### COVENT GARDEN MARKET.—APRIL 26TH.

Prices remain the same, with a steady business doing.

##### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, half sieve .. ..	1	0	3	6	Lemons, case .. ..	10	0	15	0
" Tasmanian, per case ..	3	6	9	0	Oranges, per 100 .. ..	4	0	9	0
" Nova Scotia, per ..					St. Michael Pines, each ..	3	0	6	0
barrel .. ..	12	0	17	0	Strawberries, per lb. ..	3	0	5	0
Grapes (new) per lb. ..	4	0	5	0					

##### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Kidney, per lb. ..	0	6	1	0	Mustard and Cress, punnet	0	2	0	0
Beet, Red, dozen .. ..	1	0	0	0	Onions, bunch .. ..	0	3	0	5
Carrots, bunch .. ..	0	4	0	0	Parsley, dozen bunches ..	2	0	3	0
Cauliflowers, dozen .. ..	2	0	3	0	Parsnips, dozen .. ..	1	0	0	0
Celery, bundle .. ..	1	0	1	3	Potatoes, per cwt. .. ..	2	0	5	0
Coleworts, dozen bunches ..	2	0	4	0	Salsafy, bundle .. ..	1	0	1	6
Cucumbers, dozen .. ..	2	6	4	0	Scorzonera, bundle .. ..	1	6	0	0
Endive, dozen .. ..	1	3	1	6	Seakale, per basket .. ..	1	3	1	6
Herbs, bunch .. ..	0	3	0	0	Shallots, per lb. .. ..	0	3	0	0
Leeks, bunch .. ..	0	2	0	0	Spinach, bushel .. ..	3	0	3	6
Lettuce, dozen .. ..	0	9	1	0	Tomatoes, per lb. .. ..	0	6	1	0
Mushrooms, punnet .. ..	0	9	1	0	Turnips, bunch .. ..	0	3	0	4

#### AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

##### Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	2	0	4	0	Mignonette, 12 bunches ..	3	0	6	0
Azalea, dozen sprays .. ..	0	6	0	9	Myosotis, dozen bunches ..	2	0	4	0
Bluebells, dozen bunches ..	0	6	1	0	Narciss, var., French, dozen				
Bouvardias, bunch .. ..	0	6	1	0	bunches .. ..	1	0	4	0
Camellias, doz. blooms ..	1	0	2	0	Orchids, per dozen blooms	3	0	12	6
Carnations, 12 blooms ..	1	0	3	0	Pelargoniums, 12 bunches	6	0	9	0
Cowslips, dozen bunches ..	1	0	2	0	Pelargoniums, scarlet, doz.				
Daffodils, double, dozen					bunches .. ..	4	0	6	0
bunches .. ..	1	0	3	0	Polyanthus, dozen bunches	2	0	3	0
Daffodils, single, dozen					Primroses, dozen bunches	0	9	1	0
bunches .. ..	2	0	6	0	Primula (double) 12 sprays	0	9	1	0
Eucharis, dozen .. ..	4	0	6	0	Roses (French), per doz. ..	0	6	2	0
Gardenias, per dozen ..	1	0	2	0	" (indoor), dozen .. ..	0	9	2	0
Lilac, white, French, per					" Red, per doz. blooms ..	1	6	3	0
bunch .. ..	3	0	5	0	" Tea, white, dozen .. ..	1	0	2	0
Lilium candidum, dozen					" Yellow, dozen .. ..	2	0	4	0
blooms .. ..	0	9	1	0	Tuberose, 12 blooms .. ..	0	9	1	0
Lilium longiflorum 12					Tulips, dozen blooms .. ..	0	4	0	6
blooms .. ..	2	0	3	0	Violets, Parme, French, per				
Lily of the Valley, dozen					bunch .. ..	2	0	4	0
sprays .. ..	0	6	1	6	Violets (English), dozen				
Maidenhair Fern, dozen					bunches .. ..	1	0	1	6
bunches .. ..	6	0	9	0	Wallflowers, doz. bunches	2	0	4	0
Marguerites, 12 bunches ..	2	0	4	0					

##### PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	12	0	Ferns (small) per hundred	6	0	8	6
Arum Lilies, per dozen ..	8	0	12	0	Ficus elastica, each .. ..	1	6	7	6
Aspidistra, per dozen ..	18	0	36	0	Foliage plants, var., each ..	2	0	10	0
Aspidistra, specimen plant	5	0	10	6	Genista, per dozen .. ..	6	0	12	0
Azalea, per dozen .. ..	24	0	42	0	Lilium Harrissi, per dozen	18	0	30	0
Cineraria, per dozen ..	8	0	12	0	Lily of the Valley, doz. pots	12	0	18	0
Cupressus, large plants, each	2	0	5	0	Lycopodium, per dozen ..	3	0	4	0
Cyclamen, dozen pots ..	9	0	18	6	Marguerite Daisy, dozen ..	6	0	12	0
Deutzia, per dozen .. ..	6	0	8	0	Myrtles, dozen .. ..	6	0	9	0
Dracena terminalis, dozen	18	0	42	0	Palms, in var., each .. ..	1	0	15	0
" viridis, dozen .. ..	9	0	24	0	" (specimens) .. ..	21	0	63	0
Dielytra, per dozen .. ..	6	0	9	0	Pelargoniums, per dozen ..	12	0	18	0
Euonymus, var., dozen ..	6	0	18	0	" scarlet, per dozen ..	4	0	6	0
Evergreens, in var., dozen	6	0	24	0	Primula, single, doz. pots	4	0	6	0
Ferns, in variety, dozen ..	4	0	18	0					

Bedding plants in variety.





## HEAVY LAND.

VERY general are the complaints of heavy land farmers about the condition of clays ploughed after the heavy rain of February, and so hardened by the dry weather of March and April that a seed bed in it for spring corn has been an impossibility. This applies to clay land ploughed when saturated by rain water. We hear also of some ploughed earlier, then pulverised by frost, only to be beaten down to the consistency of putty by rain subsequently, and then hardened like paving stones upon the surface—a hard crust over the “putty,”—two extremes, part of it being too dry and hard, the other too wet and sticky for spring tillage. Even when rain falls again it will be no easy matter to get a seed bed in such soil, and its unkind condition must surely give rise to the query, Is it worth while keeping such land under the plough? We think it is not worth while, and invite attention to the alternative of either laying it down to temporary or permanent pasture, or to imparting such a degree of mechanical division to it as to render the hard crude condition of so much of it now an impossibility in the future.

Friability, or the property of crumbling easily, is an indispensable necessity in all arable land. To this plain fact we invite special attention now, while heavy land farmers regard their acres of hard clods with dismay. To any inquiry as to the cause of their difficulty the invariable answer is “The weather.” Strange indeed is it that no thought of soil amelioration ever seems to occur to those engaged in its culture, whose very bread depends upon good tillage, and who must be aware of the fickle nature of our climate. Yet from all parts of the country come letters complaining of the impossibility of corn sowing, some just complaining, others seeking advice. For the moment nothing can be done, but for the future a radical change may be wrought, in many an instance well known to us. Take for example Essex clays. With London so near with its daily output of thousands of tons of dustbin refuse, its daily clearance of stable manure under wholesome sanitary laws, the soil of that county, so favourably situated, ought long ago to have been rendered so friable and full of humus as to take rank among the best mixed soil. If this appears too large an undertaking—this dealing with an entire county, let us take some farms in it that are under the wise and sensible management of Scotch farmers. Under the six, seven, or eight years’ rotation they have most of it in temporary pasture, breaking up a moderate portion of it yearly. If to such land mechanical division was gradually imparted by dressing the portion to be ploughed heavily with the “ashes given away,” as may be seen on many a notice board in the metropolis, precisely the desired effect of perfect friability would be imparted to it.

In part ii. of the Journal of the Royal Agricultural Society for 1891, Mr. Primrose McConnell, in writing of his work on the Essex clays, says, “I must not omit to mention the part played by gas lime in ameliorating the soil. The action of lime on a clay soil is well-known, and in this district (Ongar), we use immense quantities of the spent lime from the London gas works, which we get at the cost of the carriage. It is applied in various ways, and many are foolish enough to use it without manure. Some mix it with earth for compost for top-dressings. We prefer to apply it raw, at the rate of from 4 to 6 tons per acre, in autumn, to the lea land that is to be ploughed up during the winter. By this means all ‘grubs’ are killed, the turf is partly killed, the soil is made more friable, while, of course, the natural fertility is stimulated. By itself

I have seen it act on a crop as strongly as nitrate of soda, but the soil must be fed along with it. Its effect on the mechanical texture of the soil is wonderful. I remember one case of a field that was partly dressed and partly left undressed with it, and in broadcasting the seed afterwards I could feel the difference in the soil in stepping from one part to the other every time I went up and down the stretches, because the limed part was so loose and friable.”

Lime, pit sand, road sand, coal ashes, slag, gravel, burnt clay, charcoal, wood ashes, mortar rubbish, any and every available substance containing hard particles to impart mechanical division to the clay should be used. Not always from carelessness is it that ashes are not used. Repeatedly have we had to overcome the popular idea that coal ashes are poisonous to soil. Of course the idea is absurd; but there it is, an absolute stumblingblock to many of those we so earnestly desire to help. It is probably some such idea which prevents farmers in the coal districts from using some of the fine slag from blast furnaces. We have recently seen huge heaps of such slag near ploughed land where mechanical division was evidently much needed.

## WORK ON THE HOME FARM.

In such a dry spring manuring for Mangold by using farmyard manure in the furrows will go far to promote vigorous growth immediately after seed germination, because the large per-centage of moisture in the manure prevents the young plant suffering from drought. It grows so quickly, with its first roots spreading among the manure, that it is soon out of harm’s way. To this brisk growth the superphosphate and nitrate of soda sown with the seed contribute, and when the plant is thinned a surface dressing of the nitrate proves a good investment, the vigorous growth being so well sustained that an exceptionally heavy crop is a certainty. If Mangold is grown at all it is a crop that well repays all we can do for it by early sowing, by liberal manuring; but thinning the plant as soon as it is large enough, and by such a free use of hand and horse hoes as leaves the crop a clean one when the leaves meet across the space between the rows.

As usual, early sowings of Swedes will follow the Mangold sowing. This has long been a rule in Norfolk, and so far as we have seen it followed in other counties it has answered well. For this crop of Swedes we prefer ridges prepared precisely as for Mangold, as there is then very little risk of losing plants from the dry weather common to May. Some mildew there may be among the early Swede, just as there will be a slight per-centage of plants bolting to seed in the early sown Mangold; but neither of these blemishes are sufficiently bad to be worthy of serious attention. The later crops of Swedes are sown on the flat, a well drained free soil being chosen where the crop is to stand over for folding when the lambs are strong enough to go out with the ewes upon them.

We used to make an early sowing of White Turnips in May for use in August and September, when pasture herbage so often falls off. But since growing green Maize it has been used as a capital substitute for the Turnips, both as being a more certain, more nutritious, and much more productive crop. Both crops require rich land; of the two the Turnips involve more labour in thinning and hoeing, and the result is not nearly so certain as it is with Maize.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1893.  April.		Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
Inchs.	deg.										
Sunday ..	16	30.186	53.0	47.4	N.	47.0	63.9	37.9	100.9	35.0	0.028
Monday ..	17	30.278	45.3	44.7	E.	48.2	53.7	45.0	68.7	45.7	—
Tuesday ..	18	30.143	53.4	48.2	E.	47.1	69.3	40.9	99.4	37.7	—
Wednesday ..	19	29.962	61.4	52.3	N.E.	48.1	73.9	44.9	108.0	39.3	0.197
Thursday ..	20	30.023	56.8	53.9	E.	49.9	78.2	45.9	113.7	41.1	0.016
Friday ..	21	30.128	61.9	52.8	E.	50.2	77.1	46.3	113.8	41.9	—
Saturday ..	22	30.167	59.2	52.2	E.	51.4	69.2	46.1	109.3	40.9	—
		30.127	55.9	50.2		48.8	69.3	43.9	102.0	40.2	0.141

## REMARKS.

16th.—Bright sunshine in morning, clouded over in afternoon, spots of rain in evening.  
 17th.—Overcast throughout, with a little rain early, and frequent drops of rain till about 1 A.M.  
 18th.—Hazy, with faint sunshine.  
 19th.—Warm with bright sunshine throughout, cloud in evening.  
 20th.—Thunder from 6.50 to 7.10 A.M., followed by rain; foggy and thick from 9 to 10 A.M., then bright sun till 4 P.M., cloudy after, and thunder at intervals from 4.15 P.M., and raining from 6 to 7 P.M.  
 21st.—Almost cloudless throughout.  
 22nd.—Bright and sunny throughout.  
 A remarkably warm week, with enormous daily ranges of temperature, reaching 32.3° on the 20th. The maximum of that day, 78.2°, has not been equalled in April since 1874, on the 23rd of which month it reached 79.2°—G. J. SYMONS.





TWO years ago come June a writer in the *Journal of Horticulture*, fresh from a visit to a Tulip bed that impressed him—not one of those glowing masses of yellow, crimson, or rose produced by early bedding Tulips in parks and gardens in April and May—but the Tulip bed of an old florist, thus recorded his impressions:—“There are Tulips from many collections in England and several from continental sources, but there is no mistaking the superiority in form, substance, and accuracy in colouration of the best of the English florists’ Tulips over all others that are grown in comparison with them. The ‘amateurs’ Tulips, as they are called on the Continent (the equivalent term to our florists’ Tulips) are in general appearance attractive, and the colours of some compel admiration; but in most of the blooms these colours are where they ought not to be, running right down to the base of the petals, and in some other respects irregular. Many of the petals are also too long pointed and flimsy, lacking the close cup-like shape and stout texture of the best English forms. These, too, are clearer at the base, as if a sun was set at the bottom of the bizarres and the most silvery of moons in the roses and byblœmens lighting up the colours of the flamed and feathered petals there displayed in beautiful regularity and indiscriminate hues.”

Taking up the theme and observing the striking and well-defined characteristics of our home-raised flowers, as developed and established by generations of florists, another writer last year went on to say:—“Since Conrad Gesner brought *Tulipa Gesneriana* from Constantinople more than 300 years ago marvellous work has been accomplished by hybridisers in various countries (with that species as a parent), but it is in England that the properties which are most esteemed in the best Tulips of to-day—perfect form, smoothness, substance of petal, and clean base—were developed. There are florists’ Tulips in abundance that possess none of these qualifications, and the time has come for finding some distinctive appellation for the noble class of flowers which pay tribute to the English florists’ skill.” The natural and just name foreshadowed was thereupon adopted—“English Tulips.” The distinction is the more called for since many of the “amateur” or florists’ Tulips of the continent come of a different race.

The overwhelming majority of Dutch florists’ or amateurs’ Tulips, effective as they may be for garden decoration, are wholly distinct from and distinctly inferior to the highest type of Tulips that have not been “made in Germany” (or rather Holland) but in England. This is plainly seen when extensively grown in comparison, as in Messrs. Barr & Son’s collection, and to a more limited extent in many private gardens. It is important that this should be known and the essential differences between what may be termed home and foreign flamed and feathered varieties recognised now that a demand is increasing for Tulips that combine brilliancy with chaste refinement such as is represented in the florists’ forms of *T. Gesneriana*. These are usually in full beauty in May, sometimes June, but this year they were fully expanded in the south of England during the last week in April. Beds of these Tulips shaded with canvas remain attractive for a month—a veritable floral feast, fascinating and unique.

If this is so it may be asked, “Why are not these late English florists’ Tulips more popular? why are collections of them so few

and far between?” There has been no attempt to popularise them, but somewhat the reverse. Connoisseurs as a body have valued them for their rarity, and have not willingly let them “go.” It is not surprising in one important respect that this should be so. The highest forms are regarded by those who possess and love them as precious gems not to be entrusted to persons who do not understand them, and who cannot appreciate what they represent—years of unremitting care in their preservation following years of waiting, first for the flowering of seedlings and the then longer time of breaking from the self or breeder stage into the flames of colour or feathered fringes that come to stay, and give life-long pleasure to those who own and cherish them. There is not much wonder that they should be jealously guarded, and as far as possible kept in the hands of those who know their value instead of being scattered abroad and lost; and thus it is if a collection of real genuine English Tulips loses its owner in the course of nature, and the bulbs have to be dispersed, the cognoscenti travel far to see them, and mark them for their own, at least such as they desire and can secure. Of late floral pilgrims have wended their way to Petersfield, Hants, to obtain what they could of the late Mr. Lloyd’s varieties, Bentley and Barr, Hogg and Lakin, and Miss Lloyd knows who besides, have been down to share in the honour of preserving her father’s long-cherished flowers. There was no need to advertise them, and all have found new owners. How, then, under such circumstances can these genuine English Tulips, which are thus “run after” by owners of existing collections ever become popular, and the numbers of growers of them materially increase?

The choicer and rarer named varieties cannot be obtained and collections formed of them in a year or two; or in other words, persons who might, as several do, like to become growers of these remarkable flowers will have to do as their “fore-elders” did—start at the bottom of the ladder and steadily work upwards; but until recently it has been extremely difficult to make a start at all. Continental mixtures could be obtained, but these are not English, and do not form a good foundation; but inexpensive mixtures of real English Tulips are now procurable. Mr. Peter Barr has taken them in hand, and he is not the man to rest satisfied till he attains his object. The same energy, perseverance, and knowledge which, from the smallest of beginnings, resulted in the world-famed collection of Daffodils—flowers once unappreciated, and, as a rule, rejected from gardens, but now grown in most; flowers once rarely seen in markets, but now sold in hundreds of tons—the same untiring zeal by which so much has been accomplished in this once neglected family of bulbous plants is bound to have effect, if not to the same extent, yet in a very material way in inciting public interest in late Tulips.

Mr. Barr is evidently a believer in the dictum that the supply of anything good in itself creates a demand, and English florists’ Tulips have been obtained from various sources and increased at Long Ditton where they now number many thousands. The result has been encouraging, and the demand for bulbs last year has given an impetus to production. The start is at the bottom of the ladder, cheap mixtures of unnamed varieties in which flowers of sterling merit are included; in fact there are grades of merit, and steadily will these be recognised, the best flowers being noted and admired as their properties are appreciated; then still better will be sought for and named forms procured. In that way are florists made and collections of the flowers they love established. It is so in the case of all flowers. They are first liked, then understood, then become fascinating and make the lives of their owners better worth living. That is what flowers do, and Tulips not the least, and hence the desirability of encouraging a taste for an extension of culture of these among other flowers, which, if intelligently indulged in, can lead to nothing but good. In this work Mr. Peter Barr is worthily sharing, and he will not rest till he makes these Tulips “go.” He has, moreover, the active



co-operation of his son with true florist's instincts, and Mr. William Barr is destined to make his mark in the Tulip world.

The Long Ditton collection is in full beauty now. The plants are not vigorous nor the flowers large, as the long drought and abnormal heat have brought them out before the proper time; but the characters of a number of varieties are well displayed, and the collection, while full of interest to experts, affords valuable lessons for learners. Day by day, from far and near, come old florists' and young aspirants to view them. Every flower is scanned, its points noted, and merits or defects recorded. An hour to a bed may be termed a quick examination, and thus a long day may and is spent by many among Tulips. Good stocks of some of the leading named varieties are already established, while others are represented in yet small numbers, but increasing yearly. Among the *Roses*, *Aglaiia*, a fine stock, is charming in its translucency, and the same may be said of Middleton Maid; Alice is small but pure, a dainty gem; Modesty, both flamed and feathered forms, is one of the loveliest; Lady Derby is splendid in form, pure, and beautifully marked; and Mabel is represented in goodly number, but there will never be too many of this delightful Tulip, for whether in breeder or broken form it commands admiration. Of the *Byblœmens* Lord Denman is in the greatest force; it is beautifully marked, but has not the clear basal disc that is desirable, and hangs down its head, still it is one to begin with; and to it those who can may add Storer's No. 2, of fine character; Agnes, stately and upright; Downie's Feathered, very chaste; Bessie, in feathered and flamed form; Chancellor, in three strains—Bentley's, dark; Douglas's, light and neat; Leach's Medium—all good; Duchess of Sutherland, very clear; Friar Tuck, fine form and chaste; Talisman, small, but perfect; and Mrs. Jackson, almost black, stencilled with silver. Of the more rich coloured *Bizarres* two dwarf forms, Caliph and Colbert, shone very brightly; Charles X., taller, darker, and good—a fine display; Royal Sovereign, a feathered form of the last named, splendid; Duke of Devonshire, bold and fine; Dr. Hardy, a fine stock of a grand Tulip; Everard, rich and glowing; Orion, very bright; George Hayward, a noble flower in splendid colour; Masterpiece, dark and well flamed; Pilot, bright, well marked, a fine stock; Sir Joseph Paxton, one of the best, Barr's strain, very fine; and Lord Stanley, of similar character. The varieties named are only a few of the notabilities at Ditton, and whoever is fortunate in obtaining them will have the nucleus of a good collection.

From these series of beds of named varieties and mixtures near Surbiton Station we are whirled to the Sussex coast to see the Tulip bed of an amateur—just one bed of sixty-three rows of seven plants each under a canvas tent, but something to remember. At Ditton there is a large collection; under this Sussex tent a choice selection of splendidly grown plants and magnificent blooms. Mr. Barr was so entranced that he had to rush home and send his son to gather hints and inspiration. Rose, byblœmen, and bizarre is the order of planting throughout, each in sequence from end to end of the bed; and the soft warm flush of the first, the purity and delicacy of the second, and the rich glow of crimson and gold of the third type, form a combination that can only be seen in these flowers. It is not only a difficult matter which to admire most, but hard to tell whether the breeder or broken forms of the same variety are the more beautiful. Take Mabel in its first stage, a shimmering rosy salmon with a spotless circular base; then take the flower when the white shoots up in silvery streaks and, so to say, crushes the body colour together in darker folds; both are alike beautiful, and can be looked at again and again. It is the same with purple selfs and the central silvery moons, which in due time break into byblœmens, and the dark reddish selfs with golden discs that develop into bizarres—the dark ground deepening when the yellow shoots through it in golden rays, and the nearer the former approaches black the better.

It can only be said that some of the more striking blooms in this glowing bed were among *Roses*—Mabel, above mentioned;

Modesty, a charming flower; Annie McGregor, equally beautiful in its deeper hue; Madame St. Arnaud, very bright; Mrs. Barlow, a grand breeder, also breaking into a perfect beauty; Apollo, tall and stately, with Lizzie Watkins, Hermione, and Mrs. Whittaker, all worthy of their rich surroundings. Of *Byblœmens* Storer's No. 2 heads the list with its magnificent blooms correctly marked, though the goblet is a little deeper than the coveted champagne glass form; then follows each with distinct properties of its own. Duchess of Sutherland, Friar Tuck, Mrs. Jackson, Mrs. Pickerill, Queen of May, Talisman, and a fine break from one of Hepworth's breeders. In *Bizarres* George Hayward stands out grandly with glorious blooms; Dr. Hardy attracted by its richness and bright clear pencillings; Sir Joseph Paxton, in different strains, was in splendid condition; Masterpiece, in brilliant colour, black and gold, but the disc not quite perfect; while Ajax, Hardwick's grand Bizarre, John Brook, Lord Lilford, and Pilot, with the dwarfers Vivid and Colbert, shone brightly in the collection.

This beautiful Tulip bed affords the owner much pleasure, though he does not sit on an elevated throne at the end of the tent for days together watching the flowers as an old florist used to do in past times in Hertfordshire. Dr. Hogg—the name is out—has other things to divide his attention, namely a fine collection of hardy shrubs, including a grand seedling Horse Chestnut as well as a collection of young and beautiful fruit trees giving a great promise of fruit all round; but Tulips are just now in the ascendant and charm all who see them, as well they may, for it is doubtful if there is an equal display of grand blooms to be seen in the south of England.—PROBATIONER.

## POLLINATION OF TOMATO FLOWERS.

AMERICAN writers use the term pollination in the same sense as we do the word fertilisation in referring to the transference of pollen from the stamens to the stigma of the pistil connected with the seed vessel. In most cases this occurrence is absolutely necessary in the case of Tomatoes. Fourteen years ago I proved to my own satisfaction, and briefly stated in my first edition of "The Tomato," that more than ordinary pains ought always to be taken in fertilising the flowers if perfect formed fruit are desired. On page 49 I pointed out that the fruit is apt to swell unevenly unless the flowers are properly impregnated, and fully demonstrated what could be done in the way of improving the form of varieties not noted for their handsome appearance, by repeatedly showing Trophy in nearly as good condition as Perfection is frequently shown now-a-days. The flowers which preceded these fairly handsome fruit were selected, those with fasciated pistils being early pinched off, the pollen from one flower being transferred by contact with the pistil of another, two flowers being "pollinated" at one time. This may have been a rather rough and ready method of achieving the desired object—viz., perfect fertilisation, but it answered well, or better than merely tapping the flower stems when the pollen was dry enough to disperse, depending upon some of this to lodge on the stigmas.

I think now that not enough was made of this point, and it has been left to Mr. L. H. Bailey, Professor of Horticulture, Cornell University, Ithaca, New York, to more amply demonstrate how much may be done in a more effective manner than occurred to me to try. In connection with this University there is an agricultural experiment station, and the various experiments being constantly conducted and ably reported comprise much that is of interest to fruit growers generally. Tomatoes being extremely popular in America, they receive a rather large share of attention at the hands of Mr. Bailey and his assistants, this including house as well as open-air culture. The conclusion has been arrived at that during the short, dull days of winter "some artificial aid must be given the flowers to enable them to set," and also that the common practice of tapping the plants sharply several times during the middle of the day with a padded stick is not so effective as desirable. The practice is stated to be "better than nothing," but compares unfavourably with the plan of transferring the pollen by hand. I cannot do better than to let Mr. Bailey describe his and a friend's practices in his own words. "There are various methods of pollinating the flowers. The most expeditious and satisfactory method which I know is to knock the pollen from the flowers, catching it in a spoon, watch-glass, or other receptacle, and then dipping the stigmas of the same or other flowers into it. There is a time in the life of a flower when the pollen falls out readily



if the atmosphere is dry enough to hold dust; this is when the flower is fully expanded and somewhat past its prime. The flower is tapped lightly with a lead pencil, and the light yellow powder falls out freely."

Mr. C. J. Pennock, a Cornell graduate, considers pollination of the flowers, in the case of winter Tomatoes, very necessary, and goes over the whole of his plants daily while they are in flower. He has devised a tool for himself in the shape of a light piece of wood about 16 inches long and one-half inch square, at one end of which there is a saucer-like depression. This stick is held in the left hand with the depression under the flower to be pollinated, while another light stick is used for tapping the blossom to shake out the pollen, the end of the pistil or stigma being pressed at the same time into the pollen accumulated in the depression. Since he has adopted this simple and by no means a slow or tedious method of pollinating the flowers, a good set of fruit has always resulted, or much better than had hitherto been effected by using a brush or jarring the stems. In Mr. Bailey's report or "Bulletin" the effects of complete and faulty pollination are shown by means of illustrations of fruit whole and cut cleanly across, those most perfectly fertilised having all the cells furnished with seeds and properly developed, others not pollinated (I like this term best) or only partially so swelling very irregularly owing to some of the cells being seedless and solid. The experiments need not be described, but were exhaustive and conclusive.

A wide-spread dissemination of this serviceable information would perhaps have been more to the purpose in the autumn or winter months; but I hold that it is unwise to leave anything to chance even during the most favourable weather for pollinating Tomatoes. For ordinary purposes all that is necessary during the late spring and summer months, in the case of plants under glass, is to keep up a circulation of warm dry air, and when the pollen is quite dry, or say towards midday, to smartly jar the stems, tapping them with a padded stick in preference to anything that would bruise them. This disperses the pollen in clouds, and enough of it settles on the moist stigmas to effect a good set. When, however, the desire is to have extra fine yet perfectly formed fruit, then it pays to take a little more trouble in selecting the flowers and pollinating them. Any with fasciated pistils, notably the extra strong central flower on each strong bunch, should be early pinched off, removing this and thinning out the rest greatly strengthening or enlarging those reserved. Fine fruit never follow small flowers, nor will they be had if the pollination is not perfect.

In addition to the fruit most perfectly furnished with seeds attaining the largest size, I hold that they are also the best in point of quality, the pulp that surrounds seeds being of far better flavour than the core or solid matter in the cells where no seeds are formed. There is, therefore, much to be said in favour of trying either the one or the other of the American methods of pollination, and they certainly promise to surpass the older methods practised in this country during the autumn and winter months. It has been found that an abundance of pollen applied over the entire surface of the stigmas by increasing the number of seeds increases the size of the fruit, and once this fact is better known artificial pollination will also become more general.—W. IGGULDEN.



CYPRIPEDIUM GRANDE.

A GOOD specimen of this handsome Lady's Slipper is now in bloom in the Edgbaston Botanical Gardens, Birmingham. It was raised by Mr. Seden, at Messrs. Veitch & Sons' Nurseries, and is the largest of the Selenipedium hybrids, a cross between *C. longifolium* Hartwegi and *C. caudatum*, having the appearance of the latter. It is described in Mr. Veitch's Orchid book as having the staminode pale yellow fringed with blackish hairs at the back, the upper sepal yellowish white with yellow-green veins, the lower sepal similar but with paler veins; petals 12 to 15 or more inches long, rose pink, except the broader basilar portion which is

yellowish with green veins; lip greenish yellow toned with brown, paler beneath, the infolded lobes ivory white spotted with deep rose. The flower scapes frequently exceed a yard in length, and the flowers measure 7 to 8 inches across the sepals from the top. It has strong handsome foliage and is a very striking plant.—W. D.

#### LÆLIO-CATTLEYA ASCANIA.

ONE of the most beautiful Orchids shown at the Drill Hall on Tuesday, April 25th, was *Lælio-Cattleya Ascania*, a bloom of which is depicted in the accompanying illustration (fig. 65). It is a bigeneric hybrid, the result of a cross between *Lælia xanthina*



FIG. 65.—LÆLIO-CATTLEYA ASCANIA.

and *Cattleya Trianae*. The flowers are marked with the characteristics of both parents. The sepals and petals are pale sulphur yellow, the lip being of a richer shade, with a rich purplish crimson lobe. This interesting hybrid was exhibited by Messrs. J. Veitch & Sons, and a first-class certificate was awarded for it.

#### ODONTOGLOSSUM CRISPUM NOBILIUS.

THOSE who have not seen this splendid Orchid can scarcely form an adequate idea as to its beauty. There are many fine forms of *Odontoglossum crispum*, but in my opinion this is the best of them all. The flowers are very large, being quite 3 or 4 inches across when fully developed. The sepals and petals are white, heavily blotched with rich chestnut red. The labellum is also white, with a brownish red and yellow crest. I believe a first-class certificate was awarded for this grand variety last year.—C.

#### A MANUAL OF ORCHIDACEOUS PLANTS.

PART ix. of this admirable work has been issued by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, and, like its predecessors, it bears the stamp of careful preparation. The instalment before us comprises 194 pages, and the genera dealt with include *Cymbidium*, *Zygopetalum*, *Lycaste*, *Acineta*, *Stanhopea*, *Trichopilia*, *Cynoches*, *Maxillaria*, *Mormodes*, and *Anguloas*. Detailed and accurate descriptions of the species and varieties of the above and other genera are given, and in many cases accompanied by admirably executed illustrations. We may again have occasion to refer to this excellent publication.

#### SALE OF ORCHIDS AT AYMESTREY COURT, WOOLTON.

ON Friday last the excellent collection of Orchids owned by Col. H. J. Robinson, and which have been so successfully cultivated by Mr. C. Osborne, were sold by auction by Mr. John Cowan. There was not a large number of persons present, consequently prices did not rule so high as might have been expected. The following were some of the higher prices realised:—*Cypripedium caudatum*, a fine specimen in a 9-inch pot, nine very strong growths and eleven flowers, 9 guineas; *Odontoglossum vexillarium*, twenty-one growths, thirty-five flower spikes, very fine



variety, £7 10s.; *Cypripedium Spicerianum*, 7 guineas; *Odontoglossum Alexandræ*, hybrid £5; *Cypripedium superbiens* (Prince Demidoff's variety), 7 guineas; *Cymbidium Lowianum*, £4; *Lælia purpurata alba*, £5; *Lælia anceps* (white), 4 guineas; *Odontoglossum Alexandræ*, A1 variety, £3 10s.; and *Sobralia macrantha alba*, £3 5s.—R. P. R.

### SUPERFLUOUS GROWTHS.

THE necessity of "thinning" crops has been repeatedly brought under the notice of readers of the *Journal*. As a phase of gardening, it is indeed one of the points which has been advocated for so long as I have read its pages, and that embraces a long series of years. To add anything further may therefore appear superfluous; but, as there are always new readers, an old tale is fresh, and, moreover, I hope to show that the last word has not yet been said on the subject under review. I shall pass over the thinning of Vine growths, not because I do not realise its necessity, as I am persuaded the well-being of Grape Vines depends very much on the foliage being fully exposed alike to air and light; and in the same connection other kinds of fruits which are sometimes seen too thickly leaved through neglect in thinning out spurs and branches are not referred to at present. The particular "crop" I wish to draw attention to is the large one of plants grown in pots.

I do not think I exaggerate in saying that no young man of his own initiative ever attempts to thin out the shoots or foliage of pot plants. That, at least, is my experience. On the other hand, most young men have a good idea as to the need of thinning in the case of fruit trees. Tell an assistant to thin the shoots of a Vine or a Peach tree, and in most cases he knows how to set about it; but set him to thin a *Pelargonium*, and invariably he has to be told what to do. The obvious reason is that in the former case thinning is a matter of routine; while in the latter it does not appear to obtain to any great extent.

At first sight it appears somewhat peculiar that the removal of a few weakly growths and leaves from a plant in good health should exert so palpable an influence on the future of that plant. The immediate result is an increased vigour in the foliage and growth of the plant, and ultimately more bloom of better quality. One would naturally think that so long as growth is not, I will not say overcrowded, but simply not close, there would be benefit to the plant from the greater amount of foliage; but in practice it is not so. Every weakly growth, whether it crowds a stronger one or not, is a task on the energies of the plant, and there is an immediate improvement in the general development of the other shoots directly these are removed. There is something more than merely an increase of light and of air to be reckoned with, for in many cases which have come under my notice there were absolutely nothing like crowding of shoots or of foliage; yet the removal of weakly shoots, and sometimes of small leaves alone, had a pronounced effect on the plant. It would appear that a concentration of the energies of the plant on the best placed shoots possessed an equality of vigour, the chief factor in achieving this result.

I confess that when I at first began to thin plants in this way it was not with any idea of improving them, or of gaining an increase in vigour. I merely saw no good in leaving shoots which in no case could be expected to flower, but the result, as already said, is a marked improvement in all kinds of plants. As examples of what I mean, we take for example a *Tuberous Begonia*, which at present is producing a score of young growths from its crown. There is space for only a fraction of these growths; it may be one-half, perhaps a quarter. The result, if all are left, is that a few take the lead, and possibly no harm may be apparent from allowing all to remain; but if all the weaker growths are removed the vigour of those left will be enhanced in a remarkable degree. And suppose, as is sure to be the case, that young side shoots are developed as the first crop of flowers begins to go off, by the simple method of removing all growths which have done flowering the plant will become as vigorous and as floriferous as ever. I have treated plants of *Begonia Gloire de Sceaux* twice during the past winter to this cutting-out process, and they are still in beauty.

Again, let us take a very common plant—the *Fuchsia*, and instead of letting every weakly growth remain, and pinch-in every strong one to increase the strength of those which by no possibility can be strengthened, let us adopt the drastic method of removing every weakly shoot, and we secure vigour at once. Perhaps the most remarkable effect is exhibited by *Carnations*. The strongest, most floriferous, and largest-flowered flower stem is produced when the "grass" or the young shoots are thinned out. These, apparently,

can have no effect on a stem towering above them; but it is a fact that removing a thick growth of young shoots round the base of the plant has a great effect for the better. Bush *Chrysanthemums* furnish another example. Though there may to all appearance be plenty of room for the development of strong and weakly shoots, it will be always found better to remove the latter at an early period of their growth. The difference is made up by those left producing a larger number of flowers, and all of a better quality. I might add examples, but merely notice *Crotons*, which are improved by the removal of growths in the case of the small foliage sorts; while in those with large leaves all small ones taken off help others yet to come.—B.

### HARDY FLOWER NOTES.

IT is well nigh impossible to write of the flowers of April without, to some extent at least, referring to the glorious weather we have had while the month of smiles and tears has been with us. She has falsified her proverbial reputation for once, and the bright sun and clear air have harmonised well with the beauty of the flowers which responded to the wooing of the sun and genial air. The season has, indeed, been a veritable "bridal of the earth and sky," as George Herbert says, and those who admire the flowers of spring have enjoyed a rich banquet of beauty. It is delightful to gaze on the garden's beauty, glowing as it is with golden *Alyssum*, with gleaming *Tulips* glancing in the sunlight; alpine *Phloxes* covering the stones of the rock garden with mossy carpets covered with flowers of varied tint; spikes of *Honesty*, varying through shades of purple or of snowy whiteness; stately *Crown Imperials*, *Chapman's Emperor of Flowers*, starry *Saxifrages*, drooping *Lyre Flowers*, or *Bleeding Hearts*, as *Dielytra spectabilis* is called; *Welsh Poppies*, *Lungworts*; *Primulas*, from the ever-popular *Primrose* of the hedgerow to the rarer species from other lands; *Arabis*, *Aubrietias*, and the many other flowers which gladden our eyes and by their number bewilder our thoughts.

Few of these have been finer than the varieties of *Primula Sieboldi*, a number of which from seed from one of the best strains in cultivation are brightening (if brightening were needed) a range of rockwork of some length. Here they are planted at the base, where they receive the benefit of the overflow from the terraces above, and where they are flourishing in great beauty. Very attractive are they with their flowers of varied form or colour, some being nearly round and others deeply cut and fringed, while the colouring is still more varied, some being pure white, others white with the backs of the petals rose, and others again ranging from pink to deep purple. Planted in sandy peat they are increasing rapidly, and although various pieces have been given to other flower lovers nearly all have filled their allotted space. They are so hardy and so beautiful that no one need hesitate to include these beautiful flowers in their collections. It is well, however, to remember that they die so completely down that they are difficult to perceive when at rest, and are thus at times destroyed by careless digging.

Very beautiful, too, have been the various *Anemones* which are so numerous both in species and variety that a lengthened notice would be required to do them justice. Our ordinary Wood *Anemone A. nemorosa*, when seen in masses in our woods is most attractive, and near me many beautiful examples of its decorative effect may be seen. It is not our purpose, however, to speak at length of the ordinary form, but to call attention to some of the varieties of this flower which, as Lord Lytton says, is

"fashioned so  
Like to the stars of the winter snow."

One of the most recommendable varieties and one of the best known is *A. nemorosa fl.-pl.*, the double form, which is very pretty with its button-like blossoms, not so unlike the flowers of the "Fair Maids of France," but if anything of still purer whiteness. Always interesting, too, although not so readily appreciated by the ordinary frequenter of gardens is *A. n. bracteata*, "the Jack in the Green" of *Anemones*, with its leafy bracts and its neat flowers. Then we have the rosy coloured varieties and several others with flowers larger than the ordinary kind. Doubly welcome, however, although not perhaps so much appreciated since *A. apennina* became more widely grown, and since *A. blanda* made its appearance in our gardens, are the varieties of *A. nemorosa* with bluish or blue flowers. Perhaps the one of these most frequently seen (if frequently can be used where a flower is only seldom seen) is *A. n. cœrulea*, with pale blue flowers. A rare variety which, through the kindness of the finder, I have flowered this year has been named *A. n. purpurea*. This was discovered in France some years ago, and is quite distinct in colour from the ordinary bluish



varieties. I do not, however, believe that any of these will ever surpass in the estimation of the lover of the Anemone species that beautiful plant *A. n. coerulescens*, which has no rival in respect of colour, and few competitors as regards size. This year it has been particularly fine with me in an eastern aspect at the base of a rockery. A plant so planted has been very attractive, with its pleasing blue flowers of large size, one I measured the other day being no less than  $2\frac{1}{8}$  inch across.

I have at various times expressed my regret at the loss of, or difficulty of, obtaining flowers which were well known long ago, and in the case of the Wood Anemones we seem to have lost two or three varieties, and here my authority for their former existence is Philip Miller, the pages of whose "Gardener's Dictionary" may with profit be frequently searched. In the edition of 1735, under the heading of "*Anemonoides*; Wood Anemone; vulgo.;" among others he speaks of a "Wood Anemone with double purple flowers;" a "Wood Anemone with large double blue flowers;" and a "Wood Anemone with purplish-red flowers." The first and the last may possibly be our rosy coloured forms, which are not otherwise mentioned by Miller, but the one with large double blue flowers I have been unable to hear anything of, unless a plant which is grown as the double form of *A. apennina*, but which I have not seen, may be the one of which Miller speaks. This is hardly probable, and the following extract from the "Gardener's Dictionary" may be of interest, and may also lead to the discovery of this plant. "The other varieties" (i.e., other than the single white) "I have gathered in great plenty in the wildernesses belonging to the gardens at Wimbleton (*sic*) in Surrey, which were, probably, at first taken from some woods in England; in this place they increase so fast that the surface of the ground is covered with them in the spring; and, what is more remarkable, that there the large blue and double sorts are the most common." Closely allied to *A. nemorosa* is *A. trifolia* with pretty white flowers with white sepals, and having ternate leaves. This was introduced from France in 1597. This year I had the pleasure of receiving a pretty variety—a seedling from *A. trifolia*—with white flowers, having a bright pink or rose-coloured zone-like centre. This was raised at Shepton Mallet by Mr. James Allen, and may be the beginning of a new departure in this species.

Many other Anemones would call for notice, conspicuous among them being the St. Brigid varieties of *A. coronaria*, recently noticed in the Journal. These I have grown for several years, and no encomiums can exaggerate their beauty or merit. Leaving for the present other species, I am led to notice more on account of its comparative rarity than for its beauty, a little-known species known as *A. albana*, described in Paxton's "Botanical Dictionary," and the older edition of the "Cottage Gardener's Dictionary" as white, but which would be more correctly called pale sulphur. With me it grows to about 9 inches in height, 3 inches more than the height given by these authorities, and although not of the first order of merit, is desirable with its rather hairy fresh green leaves, and its somewhat bell-shaped flowers, the sepals of which are covered on the outside with silky hairs. *A. albana* is a native of the Caucasus, whence it was introduced in 1821. It appears to grow well in ordinary loam, and is suitable for the front row of the border, although grown here on the rockery where its flowers are seen to more advantage. The press of other flowers will for the present prevent further reference to one of the most attractive genera in our gardens.

The brilliant display afforded by the golden Rock Madwort (*Alyssum saxatile*) is so much appreciated that its claims to further notice need not be dilated upon. Worthy, however, of attention from its neater and dwarfer habit is the variety of *A. saxatile compactum* which, like so many other dwarf flowers, rejoices under the title of "Tom Thumb." This variety was sent out by, I believe, Messrs. Backhouse some five or six years ago, and is now finding its way into the trade generally. For many purposes it will be found superior to the typical *A. saxatile* or to *A. s. compactum*, as it only grows to a height of 6 to 9 inches and flowers as profusely as the others. It will hardly come true from seed, but it is easily increased by means of cuttings inserted after the period of flowering in sandy soil and covered with a handlight or bellglass which should be shaded.

The first of the Poppyworts of the season, although not long preceding *Papaver nudicaule*, has been *Meconopsis cambrica*, which is always welcome with its clear yellow flowers and its fresh finely divided foliage. This little "Welsh Poppy," as it is popularly called, is so accommodating in its habits that it has become widely spread among gardens here. In my own garden it flowers in the sun and in the shade, and sows itself with great freedom.

But, alas! one must close, and with a regretful look at flowers of the highest order of beauty which I have either spoken of before or for which the exigencies of space will not afford

opportunity we must close and turn to the garden, with its stores of beauty such as no pen can describe and so fitted as to entrance us with their loveliness.—S. ARNOTT.

## GRAPES—SELECTING AND THINNING THE BUNCHES.

A BUSY time is now at hand for Grape growers. Thanks in a great measure to the long spell of sunshine Muscats have set splendidly, so the question as to how many bunches each individual Vine is capable of ripening satisfactorily should be determined forthwith. Needless to say, the finest, best placed, and most evenly set bunches should be retained, these being distributed regularly along the Vines. The vigour and length of each Vine should be considered in deciding the number of bunches that shall form the crop as well as the size of the bunches which the cultivator has the choice of retaining or removing. A fully established and well-conditioned Vine, say 19 feet in length, of Black Hamburgh, Muscat of Alexandria, Gros Maroc, Gros Colman, Mrs. Pince's Black Muscat, Foster's Seedling, Mrs. Pearson, Black Alicante, Buckland Sweetwater, and Madresfield Court, showing fairly large framed bunches, bunches likely to turn the scale at 3 lbs. when ripe, and colour well at the same time, should not be allowed to carry more than seven such bunches for a crop. A greater or lesser number of bunches, according to their size and the length of the Vine, may be safely retained for a crop, providing the weight of Grapes does not much exceed 1 lb. per foot in length of the Vine.

In the case of "large-bunch" varieties, such as Gros Guillaume and Trebbiano, mistakes are often made in leaving more bunches for a crop than the Vine can possibly "finish" satisfactorily, cultivators forgetting at the right time that the larger the bunches promise to be the fewer they should be in number for the crop. Three or four 7-lb. bunches of Trebbiano are ample for one Vine if its permanent vigour is considered, as it should be. One 12-lb. bunch of Gros Guillaume and one or two smaller bunches should be allowed for a crop in preference to leaving two large bunches. In a general way, ten or eleven bunches of Lady Downe's, weighing from  $1\frac{1}{2}$  lb. to  $2\frac{1}{2}$  lbs. each, may be left on each Vine of the length indicated for a crop. Superfluous bunches should be removed as soon as the best bunches can safely be determined, and the berries ought to be thinned on those retained for the crop as early as possible after they have set, so as to not unnecessarily waste the forces of the Vines, as is the case when the Grapes are allowed to become as large as Green Peas before being thinned.

The berries should be thinned out to 1 inch from berry to berry as soon as possible after they are set, retaining the crown or central berries, and being careful not to rub the bunches in any way, or to injure the berries with the scissors. In addition to a sharp-pointed pair of scissors, those engaged in the work of thinning should have a small forked birch twig for raising the shoulders of the bunches in the process of thinning. Loose shoulders are best cut off, as single-stemmed bunches are preferable. Large bunches of Gros Guillaume and Trebbiano should have the shoulders tied neatly and carefully out, suspending the points with a series of ties from the trellis, care being taken to give additional support to the points and shoulders generally as they extend in growth, otherwise the increased weight of the extremities of the bunch will cause them to assume a perpendicular position, and to cut at the point of contact with the trees.

With regard to Gros Maroc and Gros Colman, a space of rather more than 1 inch from berry to berry should be allowed in thinning; and in thinning bunches of Buckland Sweetwater and Gros Guillaume, all that is necessary in a general way is to cut out all the small berries, as these, being furnished with long footstalks, will have ample room to swell out to proper dimensions. In conclusion, I may remark that the Vines should be kept well supplied with water at the roots during the next four or five months, giving surface dressings of Thomson's Vine manure or some other approved artificial before applying clear water, and copious waterings of liquid manure, not too strong, being given at the roots alternately with the applications of clear water, and results of the most satisfactory kind may be looked for, other points being duly attended to during the period mentioned.—H. W. WARD, *Longford Castle*.

## NATIONAL AURICULA SOCIETY.

### SOUTHERN SECTION EXHIBITION.

I HAVE for a number of years—in fact, ever since the Society was established—given my estimate of the character of its exhibitions; these have been of the most varied description, and I have sometimes been severely criticised because I have written dis-



paragingly of the exhibits, and at other times I have been told that my faint praise was worse than downright censure. I have pleaded in extenuation that I was brought up in a very rigid school of florists, and that I could not bear patiently the more lax views entertained of recent years. By those old world ideas I still hold, and my notes of the Exhibition of last Tuesday must be guided by them, as they have been in former years.

I, however, think that there will not be anyone, either of the older or modern school of florists, who will be prepared to deny that the exhibition on Tuesday last was an inferior one, and was another instance of the old saying "Never prophesy till you are sure." Very glowing anticipations were indulged in, if I remember rightly, in the pages of the *Journal* as to the splendid prospects of the Show, and perhaps in many quarters these were well founded; but it was not strange that in this absolutely unique season they should have been all falsified by the enchanting weather of March and April, and while many would have hailed a date a week earlier than usual it so happened that the Show was nearly a week later, and these two factors led to the result which I have already mentioned, and this, if noticeable amongst the Auriculas, was still more so amongst the Primulas. A friend of mine came up all the way from Torquay on purpose to see these, and of course was grievously disappointed; true, he had plenty of other things to look at, but for the one special object of his journey there was, comparatively speaking, little to compensate him for his trouble. Another proof of the earliness of the season was the appearance in several cases of fine trusses of that latest of all Auriculas Richard Headly, which is certainly one of the best grey edges in cultivation, its rich gold-coloured eye giving it a bright and lovely appearance. It well commemorates the raiser and the grower, after which it is named, as does George Lightbody, raised by Mr. Headly.

As the list of prizewinners has already been given, I shall in my notes dispense with repeating them, and refer only to special points. Of course, we naturally look for the best flowers in those staged by that "past master" in Auricula growing, the Rev. F. D. Horner, and in his stands are pretty sure to find some of the best flowers in the Show. Nor was this year an exception. The premier plant was to be found here, and one which also obtained Mr. Smith's special prize for the best green-edge, to be superior to any of those already in cultivation. The flower which gained this distinction was a seedling of Mr. Ben Simonite's, bearing the honoured name of Shirley Hibberd—had it been in France it would have been called "Souvenir de Shirley Hibberd." It a beautiful flower with a brilliant green edge, and is apparently of the same series as Ben's other fine flower, the Rev. F. D. Horner, but the paste seemed to me to be better, and therefore the body colour was not so apt to come through as it does sometimes in that fine flower; the green-edge is a scarce class. Col. Taylor, a very old flower, has several failings. Prince of Greens has a brilliant edge, but a pale watery eye, and Imperator is rarely seen in good exhibition form. Booth's Freedom has almost gone out of cultivation. We may perhaps include in this class Lancashire Hero, which sometimes as a green edge is the most beautiful of all, but then it is not truly a green-edged flower; there is nothing else to compare with these two flowers of Ben Simonite's, the Rev. F. D. Horner and Shirley Hibberd. There was also in this stand a fine bloom of Alexander Meiklejohn; in fact, the finest I have seen for some years, as also Magpie, which I have already in former years written of as the best flower Mr. Horner has raised, and probably the best white edge in cultivation. Mr. Horner had also a very fine seedling called "Dusk," which promises to be useful in its class. There were few examples of that finest of all Auriculas Geo. Lightbody, although one or two excellent blooms of it were shown.

I was very much pleased to see the position which the flowers raised by my late lamented friend Mr. Woodhead, whose early death was so great a loss. He only raised, or rather sent out, four flowers—Black Bess, Rachel, Geo. Rudd, and Mrs. Dodwell; yet these were to be found everywhere in the winning stands, and in two notable cases occupied a very favourable place in the class for single selfs. The first of these (Black Bess) carried off the first and second prizes, beating that very much cracked-up flower, Mrs. Potts, which, though beautiful and almost perfect in its flower, is so hopelessly ungainly in its growth as to deprive it of most of its value. It out-tops all other plants, and moreover the footstalks are so long that the blooms sprawl about. By-the-by, that fine flower Heroine was completely out of court. It is an early flower, and I do not recollect seeing a plant of it in the Exhibition. Again, in the class for two plants the first prize was taken by two of Mr. Woodhead's flowers, Rachel and Mrs. Dodwell, a grey and a white edge. I am sure these facts must be most gratifying to Miss Woodhead, while to myself it is also pleasant to find that the estimate I had formed of these flowers was a correct one; and one cannot cease to regret that a grower who had

so evidently hit upon the right plan for hybridising had been so prematurely taken from amongst us. In this connection recurs to me an observation made by one of our best growers, who pathetically said to me at the Drill Hall, "Ah, my dear D., who is to succeed us?" Well, the prospect is perhaps somewhat gloomy, but there are some who will take up the running, although I fear that those who will occupy the place of the speaker are not in evidence. The Auricula is not popular, like the Rose, the Chrysanthemum, or the Carnation. It is the flower of the few, not of the many; the estimate of it even amongst gardeners is just what I overheard the other day. Three persons, who seemed to me to be gentlemen's gardeners, were standing opposite a collection of Calceolarias, very beautiful, but very common things, when one addresses his fellows, "See those men over there," pointing to a group of florists who were discussing the merits of some Auriculas, "why they will stand there all day discussing those things, and yet will not give a look at these beautiful plants." *O tempora!* &c., to compare the Auricula with a Calcy, or listen to the ladies. A few of them will call them loves, &c., but the general idea is expressed by "Oh! I don't think much of them; they are so stiff and formal, and then you know you can't cut them, and they are no good for bouquets."

Yet withal there has always been a select few to whom the Auricula is very precious, and I confess to being one of them. They are associated with my earliest days of horticulture; they have formed a bond of union with many a brother florist, and they give a zest to meetings such as those on Tuesday, when we see friends we are not likely to see at any other time, and find topics of conversation in the flowers we love so much.

Such are a few of the things which strike me in connection with this Show. It has not been a good Auricula year. Many plants did not bloom at all. Many threw small trusses; and I was glad to see that this did not condemn a plant; nor did a truss of twelve or thirteen, half of which had better been away, commend a plant. And so another season has passed. The younger growers will look hopefully on; the older ones, like myself, will ask themselves with sobered thoughts, Shall I ever see another? But we must do our best to encourage others, and tell them what a fund of enjoyment there is in the cultivation of this refined and beautiful flower.—D., Deal.

#### DRY WEATHER.

I HAVE a distinct recollection of the hot and dry weather experienced during the summer of 1868, not perhaps so much from my horticultural remembrance of it, although in some respects this was the case. I cannot say that I recorded the number of rainless days, but I know they were many. During June of that year I was suffering from illness, which interfered with my annual visit to the grand Yorkshire Gala held that month in my native city.

"An Old Gardener" (page 329) may be surprised to learn that I, so early as that year, did make a few Chrysanthemum cuttings. The method of growing the plants differed much in those days to the present fashion, and so did the varieties. On reference to my diary of that year I find noted such sorts as Queen of England, Venus, and Aigle d'Or. It was deemed necessary then to employ as many stakes as the plants had blooms, numbering hundreds to each.

Referring to our rain table of the present year, from February 1st to April 21st, as requested on page 329, I find recorded 3.84 inches, 0.35 inch, and 0.04 inch, or a total of 4.23 inches for the three months. This is considerably in excess of the total recorded by "An Old Gardener," February keeping up to its reputation of "Fill dyke." During the quoted period rain fell on twenty-four days, none whatever falling on fifty-one of that period. It will thus be seen that the rain during two of the months quoted—March and April—is less than one-third of the quantity which fell in 1868, and really for horticultural purposes the total rainfall for the three months of this year is of less benefit than that quoted by your correspondent; 3 inches of rain, falling at intervals of an inch at a time, is of more benefit to growing crops than the same quantity falling at once. With the exception of 0.04 inch, recorded for April 16th, and 0.02 inch on the 29th, we have up to the present time (May 1st) had sixty-five rainless days from February 1st, and at present the prospect is a continuance of the same order. Looking over the records taken during the last ten years, I find 1892 credited with the greatest number of dry days—253. The year 1889 follows next, with but six less. Singular to relate, the years 1883 and 1884 record the same number of days upon which rain (0.01 inch) fell—135, giving a total for each year of 230 dry days.

The total rainfall here for the last ten years is 300.60 inches, the average being 30.06 inches, which is a fairly good one considering the altitude, 390 feet above sea level. In spite of the unusual drought so early in the year the crops and trees look remarkably well in the strong land of this neighbourhood, except Grass and Clover. Trifolium is now in flower, and but a few inches high. Even the Brassica tribe have not yet taken on that blue tint of the leaf which betokens a suffering from want of moisture at the roots. It is the newly sown and planted crops that need attention in the matter of watering, mulching, and surface stirring. I can manage without complaint all garden crops, but



it is the 50,000 Larch, and a quarter of that number of evergreen Firs planted last season, that I despair of if a change does not quickly come.

Regarding the blossoming of Hawthorns in April it is indeed a rare occurrence here even. I have on several occasions known these trees not to be in bloom in May, but at present the likelihood of the blossoms falling from the trees before May has been in but a short time is not remote. Another instance of the precocious nature of this season is the fact of the leaves on the Oak trees are at the present time fully developed, whereas in some seasons on May 29th I have experienced a difficulty in finding leaves so forward.—E. MOLYNEUX, *Swanmore Park, Hants.*



**EVENTS OF THE WEEK.**—Next week will be a busy one amongst horticulturists in the metropolis. On Tuesday, May 9th, the Committees of the Royal Horticultural Society will meet at the Drill Hall, particulars of which are given in another paragraph. The Horticultural Club and National Rose Society meet at the Hotel Windsor, Victoria Street, on the same day. A flower show will take place at the Crystal Palace on Thursday and Friday the 11th and 12th inst., and on Saturday, May 13th, the Gardening and Forestry Exhibition at Earl's Court will be opened.

**THE WEATHER IN LONDON.**—With the exception of a few slight showers, the weather during the past week has again been remarkably dry. The rain fell in the metropolis on Monday and Tuesday night, but scarcely sufficient to moisten the soil. At the time of going to press it is cloudy at times with a little prospect of the much-needed rain.

**WEATHER IN THE NORTH.**—Although the weather of last week has been on the whole good for the season, very cold north-westerly winds prevailed during the latter part, particularly on Saturday and Sunday. Some showers fell on these days, but owing to the wind they had little effect. Slight frost occurred during the morning of the 1st inst., with heavy showers at intervals during the day. This morning (May 2nd) is calm and dull with light drizzling rain and promise of more.—B. D., *S. Perthshire.*

**THE GARDENING AND FORESTRY EXHIBITION.**—A private view was accorded to several gentlemen to this Exhibition and its popular adjuncts—the French Bastille and Captain Boyton's Water Show, on Tuesday. A great deal remains to be done in all departments, but the work will no doubt be completed by the opening day, May 13th. The combined attractions will be of a remarkable character, and a fuller account of the great undertaking will be given next week.

**ROYAL HORTICULTURAL SOCIETY.**—The next display of flowers, fruits, &c., will take place on Tuesday, May 9th, at the Drill Hall, James Street, Victoria Street, Westminster. Professor Cheshire will lecture on "How to Solve Chemical Questions Concerning the Soil," at 3 P.M. The Temple Show on May 25th and 26th will intervene between this and the next Drill Hall meeting, June 6th.

**OXFORD BOTANIC GARDENS.**—It is stated that these gardens are to be improved by the renewal and extension of the glass houses, the University having voted £3500 for the purpose, the expenditure to be spread over three years. The Gardens are held of Magdalen College, on a lease of sixty years, and when this was granted in 1876, it was stipulated that repairs estimated to amount to £5580 should be carried out, but only £2200 of this has been laid out as yet.

**EARLY STRAWBERRIES.**—Mr. W. N. White, fruit broker, Covent Garden, writes to the *Times* as follows:—"It may be of interest to many of your readers, comparing one season with another, to hear that we have to-day (May 2nd) received from the growers of Saltash, Cornwall, our first consignments of Strawberries grown in the open, being the earliest on record. The first consignment last year only reached this market on June 4th, and some years we have known it to be the 10th and 12th of June before they came forward. We consider the season to be five weeks earlier than ordinary. We also yesterday received the first large supply of French Cherries in flats, which we notice did not come forward last year until May 16th."

**THE EARLY SEASON.**—Mr. John Carter writes from Keighley, Yorkshire:—"For more than sixty years I have specially noticed Purple Beech showing its first leaves not earlier than 7th May, this year we had leaves on Friday, 21st April."

**SELLING FRUIT BY WEIGHT.**—It is stated that the Market Committee of the Town Council of Edinburgh, in reporting upon a letter from the Secretary of the Edinburgh Market Gardeners' Association, recommend that in future small or soft fruit should be sold by weight only.

**FRENCH BEAN, SUTTON'S FORCING.**—I have tested many varieties of French Beans for forcing, but I find none equal to this. In growth it resembles Osborn's, but is rather taller. Its cropping quality is superior to that old favourite, producing more pods, which are of superior quality.—E. MOLYNEUX.

**JOHNSON'S GARDENERS' DICTIONARY.**—Part III. of the new edition of this dictionary embraces the description of plants from the genus *Corylopsis* to Ferns. Cultural details relative to stove, greenhouse, and hardy Ferns are given, and their methods of propagation described. As before stated the work will be completed in eight parts.

**BIRMINGHAM AND DISTRICT AMATEUR GARDENERS.**—Mr. F. T. Poulson of Stafford recently gave an instructive paper on "Auriculas as Town Plants" before the members of the above Association. He advocated the encouragement of the growth of these plants by town dwellers. Fresh soil, clean pots, and plenty of drainage were all that was required to ensure good plants. A vote of thanks was passed to Mr. Poulson for his paper.

**ROYAL BOTANIC SOCIETY.**—Mr. J. Douglas writes:—"There are two errors in the report of this Exhibition on page 343. I received the small silver medal for Primulas and Auriculas, the bronze medal being awarded to Mr. Chas. Turner. Mr. Turner could not have shown the self Auricula Enginecr, as there is but one plant in existence, and that belonged to Mr. A. J. Sanders, who obtained for it a floral certificate."

**THE TOTAL RAINFALL AT ABBOTS LEIGH, SUSSEX,** for the past month was 0.5 inch, which fell on the morning of the 17th. This makes the rainfall for the four months 3.15 inches below the average. The highest temperature was 80° on 20th. Highest in the sun 101° on 21st and 25th. Mean maximum, 64.19°; mean minimum, 39.08°; mean temperature, 51.13°—6.09° above the average. Hot sun and drying winds have dried the land to a remarkable extent, and rain is now very much wanted for growing crops.—R. I.

**DEATH OF MR. EDWARD SANDERSON.**—We regret to have to announce the death of Mr. Edward Sanderson of Chrysanthemum fame, which sad event occurred on Thursday last. The deceased gentleman had been unwell for some time, but his end was sudden and unexpected. Mr. Sanderson was officially connected with the Stoke Newington Chrysanthemum Society, which developed into the National Chrysanthemum Society, for thirty years, and for a long time occupied the position of President. He was a skilful grower of incurved blooms, and few men have staged smarter examples than he did. Mr. Sanderson was a most happy and genial man, highly respected by a wide circle of friends. His remains were interred at Willesden on Tuesday last, several of the officials and members of the N.C.S. being present at the ceremony, and placed a beautiful wreath on the coffin, which was covered with flowers from a number of friends. Mr. Sanderson was seventy-five years of age.

**HALLAMSHIRE FLORAL AND HORTICULTURAL SOCIETY PRESENTATION.**—At the last annual meeting of this Society Mr. Joseph Hancock, the Secretary, tendered his resignation in consequence of his entering a new sphere of labour, which would necessitate the severing of his connection with the Society. He had held the position for seventeen years, commencing when the Society was in somewhat low water and possessing but few members. By dint of perseverance and hard work his efforts were rewarded, and now the Society is in a prosperous condition. This is, for the most part, due to Mr. Hancock's untiring efforts, and the members thought that they could not allow him to leave them without some memento from them of their appreciation of his labours. A subscription list was, therefore, opened amongst the members, with Mr. Hamer Chalmer as Treasurer, and a goodly sum was raised. A handsome writing table of walnut, containing nine drawers, was purchased, and on the plate a suitable inscription was placed. The balance, 10 guineas, made up a purse.



— CARNATION PRIDE OF GREAT BRITAIN.—Mr. T. S. Ware sends us from Tottenham a bloom of this yellow Carnation, which he describes as unquestionably the best yellow Carnation ever raised. It is a border variety, and a very robust grower. The bloom is one of the largest we have seen, equalling in that respect *Souvenir de la Malmaison*, and pure, soft, yet bright yellow in colour.

— APPLE BUDS AND SPARROWS.—It is nothing fresh to me to hear of these pests stripping "W. R. Raillem's" (page 341) trees of the bloom buds. I look upon the sparrows as far more destructive in the fruit garden than the bullfinch; they favour the bloom buds of Pear trees more than the Apples. Nothing but a persistent war both winter and summer will lessen the damage annually done by this bird. In the same way I persistently kill all squirrels that enter the garden, or the woods for the matter of that.—E. M.

— BEDDING IN BATTERSEA PARK. — The bedding which is always such a noticeable feature in this charming park, has this year been started at an unusually early date. Already *Lobelias*, *Zonal Pelargoniums*, and *Gazanias* are being planted, and it is to be hoped that no frosts will now come, which will have a bad effect on them. However, I learn that Mr. Coppin, the Superintendent, is very wisely keeping plants in reserve, so that he is quite prepared to replace what may be killed or seriously injured.—H. J. W.

— CYCAS REVOLUTA FLOWERING.—Mr. A. Parrott of Cymlyn Burrows, Swansea, writes:—"I have a female plant of *Cycas revoluta* flowering here, which thirteen years ago had only five leaves, which I think rather unusual in one so young. Will any of your correspondents kindly give their experience if that is the case? And if anyone who has a male plant in flower will send cone, if seed result I will equally divide the same." [*Cycas* is dioecious, that is, the male and female organs are on different plants; so that "suckers or side shoots" from a female plant will not produce male plants.]

— CHISLEHURST AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—The above Society brought to a close a most successful winter session by an annual dinner on the 26th ult., when between sixty and seventy members and friends were present. The President, Mr. Lyne, gardener at Foxbury, along with the Hon. Sec. and other officers, have reason to be pleased with the present condition of the Society. During the past session many interesting papers were read. A circulating library of books of horticultural interest has been instituted in connection with the Society.

— THE DROUGHT AND FIRE ENGINES.—The urgent need for water in many country districts for the purposes of irrigating the land has led Mr. J. C. Merryweather, head of the well-known firm of fire-engine manufacturers, to send us particulars respecting the use of fire engines for watering crops and shrubs. We know how adapted a fire engine is for pumping water through long lines of light, portable, and flexible hose piping, by means of which, with suitable nozzles, either a heavy shower or a fine spray can be used on any part of an estate in a very short space of time. Messrs. Merryweather inform us that they are ready to advise farmers and landowners on the subject, and will undertake to lend the necessary machines at a few hours' notice. Many estates now maintain excellent fire engines both of the "Brigade" and "Squire's" pattern, and these might also be brought into service for irrigating purposes. We have seen them so used with excellent results.

— DRY WEATHER IN FRANCE.—It would seem that the spell of dry weather has been experienced on the Continent as well as in some parts of this country. A daily contemporary observes:—"The long-continued dry weather, which has now lasted in France for about seven weeks, is beginning to cause grave anxiety among agriculturists. Cereal crops are almost everywhere suffering greatly. The Clover and Lucerne crops are seriously endangered all over the country. Wheat, especially in the Beauce district, which is known as the granary of Paris, is generally withering and dying. In the north the drought threatens to be equally detrimental to the Beetroot crop. Beet sown after the beginning of the previous month is in a bad condition, as there has not been the moisture in the soil which is necessary for the proper development of the seed. Vines, on the other hand, which have so far given excellent promise, have not yet experienced any ill effect from the dry weather, and have only received a slight check from a few very cold nights recently, especially in Lower Burgundy, Aude, and the Orléannais. In the Beaujolais and Bordelais districts, and in Champagne, however, the appearance of the vineyards is splendid."

— LILACS IN BATTERSEA PARK.—It is now many years since I have seen the Lilacs in Battersea Park so fine as they have been this season. The quantities of bloom have been extraordinary. Unfortunately, owing to the hot dry weather, the flowers have very rapidly faded, and much of their beauty has, in a measure, been lost to the surrounding inhabitants, who so highly appreciate this delightful resort.—E. H. W.

— BOTANIST TO THE U.S. DEPARTMENT OF AGRICULTURE.—We learn from the "Garden and Forest" that Mr. Frederick Vernon Coville, one of the staff of the botanical section of the Department of Agriculture of the United States, and recently associated with Mr. E. Hart Merriam's Death Valley Expedition, has been appointed chief of the botanical division of the department, in place of the late Dr. George Vasey.

— PAMPAS GRASS PLUMES.—In the April number of the "Overland Monthly" it is stated that Pampas Grass was first introduced into the United States in 1848 from South America, where the area covered by this Grass amounts to 1,500,000 square miles. The plumes have been grown for market in California only since 1872. From one tract of 28 acres in that State, 260,000 plumes were sold in 1890. In California the Grass grows to a height of 20 feet, and a single stool attains an equal diameter. The principal market for the plumes is in London and Hamburg.

— THE HORTUS LODGE OF FREEMASONS.—Recently a considerable number of horticultural members of the Masonic fraternity from various parts of the country assembled at Freemasons' Hall, Great Queen Street, W.C., to take part in the consecration of the Hortus Lodge, for the establishment of which H.R.H. the Prince of Wales, M.W. Grand Master, has been pleased to grant a Warrant of Constitution to a small but influential body of metropolitan horticulturists. We understand that membership of the new lodge is to be restricted as closely as possible to members of the horticultural community.

— A "KEWITES" DINNER.—We are informed that the Kew gardeners gave a complimentary dinner on the 26th ult. to Mr. G. H. Krumbeigel and Mr. Willie, who are departing from Kew, the former to Baroda and the latter to the botanic stations on the Gold Coast. Some forty-seven persons, including several old Kewites, sat down to dinner. The gathering included representatives of England, Ireland, Scotland, Wales, Germany, Belgium, France, and Switzerland.

— MIDLAND COUNTIES PANSY SHOW AT TAMWORTH.—Pansy cultivators are reminded that this great gathering of growers and flowers will take place at Tamworth, which is about half way betwixt Birmingham and Derby, on the main Midland line, on the 24th of this month, and the date will evidently just suit the Pansy, as the season is so very early. Violas will also be exhibited extensively at the same Exhibition. Schedules can be had from Mr. W. Dean, Dolphin Road, Sparkhill, Birmingham, the Hon. Secretary.

— PRESENTATION TO MR. M'HATTIE.—A presentation was made recently to Mr. M'Hattie, gardener to the Marquis of Lothian, at Newbattle, on his departure to assume the charge of the gardens of the Duke of Wellington at Strathfieldsaye. There was a large attendance of members of the Scottish Horticultural Association and other friends, including several ladies. Mr. Malcolm Dunn made the presentation, which consisted of a gold watch with appendages, and a purse of sovereigns, while at the same time Mrs. M'Hattie was presented with a ring.

— EARLY BLOSSOM.—Mr. W. K. Woodcock writes from Taunton:—"I see a correspondent from Bridport (page 338) sends you some Hawthorn 'nearly out in bloom.' I think hereabout it must be still earlier, for more than a week since I noticed Hawthorn fully in blossom in the lanes, and at the present date (April 28th) the double flowering scarlet and pink varieties are making a fine display in many gardens in this neighbourhood. On the walls of the dwelling houses Honeysuckle, Clematis indivisa, climbing Roses, especially Gloire de Dijon and a small yellow Rose flowering in clusters (probably Fortune's Yellow), and Wistaria sinensis (the latter past its best) are everywhere making a grand display. Chestnut trees around here are very numerous, many of them exceptionally large and fine specimens, and all are now in their greatest beauty, being very full of blossom. Lilacs and Berberis have been very full of blossom, but are now past their best. Nightingales are numerous here. In the course of a short drive a few nights since I heard five birds in full song. They come so close to the town that I hear them singing from my bedroom."



— ORANGE CULTURE IN CALIFORNIA. — According to an American contemporary Orange growing in California has developed by leaps and bounds, and the demand for trees has been so great that numbers of people were induced to start nurseries. There are over 100 Orange tree nurseries in California, with more than 400 acres devoted to the business. These nurseries contain in the aggregate considerably more than  $3\frac{1}{4}$  millions of trees, sufficient in all to plant 40,000 acres of groves.

— INSTRUCTION IN ORNITHOLOGY. — With reference to this subject on page 316, it is no new idea with me, as I have included it in my syllabus of lectures under the Agricultural sub-Committee of Technical Instruction of the Worcestershire County Council, and have given six illustrated lectures in various centres, and have mentioned about sixty species in connection with agriculture and horticulture. Every twitter and every species is quite familiar to me. I have divided them under three heads—viz., destructive birds, partially destructive, and purely innocent and useful birds. I have also shown how to bring them under control either for use or to destroy by giving suitable homes to build in. Thirteen species have availed themselves of such accommodation. I believe all "W. R. Raillem" (page 341) says of the sparrow, and more too.—J. HAM.

— THE WEATHER IN HERTFORDSHIRE DURING APRIL. — The weather during the past month in this district has been exceptionally dry, with continuous bright sunshine. The sun has put in an appearance every day, and owing to the very bright weather everything is in an advanced state of growth. Caterpillars and insects of all the leaf-eating kind are multiplying very freely. Some exceptional sharp frosts have been registered, and the Plum crop in low-lying districts totally destroyed. On the morning of the 14th I registered  $13^{\circ}$  of frost. Rain has fallen on three days during the past month. Maximum in any twenty-four hours was  $0.07$  on the 16th; minimum in any twenty-four hours was  $0.01$  on the 20th. Total for the whole month,  $0.11$ ; against  $0.88$  of 1892.—E. WALLIS, *The Gardens, Hamels Park, Buntingford, Herts.*

— HOURS OF LABOUR IN GARDENS.—Noting the correspondence in the *Journal* about the hours of labour in gardens in Scotland, and the alarm such an innovation seems to have caused some of your readers, I think it may not be out of place if I mention the way we manage the Saturday half-holiday in Rothesay. From the middle of October to the middle of March we commence at 7 A.M., breakfast half hour, dinner half hour, leave at 6 P.M.; Saturday, cease work at 2 P.M. and no dinner time. From the middle of March to the middle of October we commence at 6 A.M., three-quarter hour to breakfast and same for dinner, cease work at 6 P.M., and 2 P.M. on Saturday. From April to September one man in each department takes a turn from 2 o'clock on Saturday till 5 P.M. to attend to customers, for which they are paid overtime at the usual rate. During the winter half year the one whose turn it is to be on duty at the fires does what is required in other ways. This arrangement works smoothly. Although the firm (Dobbie & Co.) lose an hour a week during the winter on each hand, during the summer there is no loss.—ANGLO-SCOT.

— SATURDAY HALF-HOLIDAY.—Your correspondent "J. L. B." (page 336) asks, "What do the young men intend to do with the houses when they leave off at dinner time?" I desire to inform him that they intend to do their duty. No young gardener who takes any pride in his work would entertain even the slightest idea of leaving his houses either open or shut from Saturday noon till Monday morning. It would be interesting to know whether such a thing as Sunday duty is in vogue in the locality in which "J. L. B." resides, or does he leave his houses to take care of themselves from four o'clock on Saturday afternoon till the men resume their duties on Monday morning? I thoroughly agree with Mr. Thorne (page 316) that the young men should take their turn to do duty on Saturday afternoon the same as on Sunday. Where the glass houses are extensive I would suggest that two men should take duty during the summer months. Your correspondent then goes on to say, "If they are to have a holiday, why not have it in the middle of the week or once a fortnight." It is well known that Saturday is the day universally set apart for a general cleaning for Sunday, therefore this argument alone should be sufficient to commend the end of the week as the most suitable. Then, again, by leaving work at noon on Saturday the men have an opportunity of visiting their friends and returning on Sunday. I venture to assume that a half-holiday in the middle of the week would be practically useless to the young men in the country and outlying districts.—P. A. L.

— KÖELREUTERIA PANICULATA.—This, says Mr. John Wilson, Leazes Park, Newcastle, is rather a singular looking, small tree. It comes from the North of China, and was introduced into British gardens in 1763. It is of deciduous habit; the leaves are imperi-pinnate, with leaflets ovate and coarsely toothed. It is quite hardy. From July to September it produces in considerable abundance small yellow blossoms arranged in terminal, spreading, conspicuous racemes. In October the flowers are succeeded by large, lightish brown, bladderly capsules. The young wood is also brown, and the leaves ripen to a fine deep yellow in the autumn before they fall. The plant thrives best in a light warm soil, where there is shelter from the blasts, and is particularly useful where the subsoil is chalk. The handsome foliage, yellow flowers, and general manner of growth, renders the *Köelreuteria* a picturesquely conspicuous object in the pleasure ground when it has been judiciously placed. It is a plant easily propagated, either from cuttings of the roots and branches, or from seeds, and can be rendered very serviceable in sub-tropical gardening. It is seldom met with having tree-like dimensions, but not unfrequently as a shrub 8 or 10 feet high. It requires a little special attention when young. The name is in honour of J. G. Köelreuter, a distinguished German botanist.

— THE GREAT RAINFALL IN QUEENSLAND.—If we have been short of rain on our side of the world lately it does not appear to have been the same "down under." Mr. Clement L. Wragge, the Government Meteorologist of Queensland, writes to the "*Daily News*:"—"I send a few particulars of the recent remarkable rainfall at Crohamhurst, situated on the western slope of Mount Blane, a peak on a spur of the D'Aguilar Range, an offset from the Blackall Ranges, South Eastern Queensland. The whole of this district is watered by the Stanley River, a tributary of the Brisbane River, and hence the values given below were prominent factors in producing the terrible floods from which we have suffered. I may mention that the observer at Crohamhurst is Mr. Inigo Owen Jones, one of my specially trained assistants, and that implicit reliance can be placed on his figures. The following are the more remarkable falls of the flood period at Crohamhurst: For twenty-four hours ending 9 A.M. Feb. 1st,  $10.775$  inches; ditto, Feb. 2nd,  $20.056$  inches; ditto, Feb. 3rd,  $35.714$  inches; ditto, Feb. 4th,  $10.760$  inches. The gauge is a standard of the '8-inch pattern, standing 1 foot above the ground, at an altitude of about 1400 feet above mean sea level. The approximate latitude and longitude of Crohamhurst are  $26^{\circ}50'$  S.,  $152^{\circ}55'$  E. The gauge was emptied every three hours, night and day, on the occasion of the greatest fall. I think meteorologists will agree that for a twenty-four hours' fall we have beaten the world's record."

— A REMARKABLE APRIL.—Had the weather been more cloudy than it was, the month would probably have been quite cold, but the abnormal presence of bright sunshine served to keep temperature unusually high, more especially in the daytime. Taking the mean of all the minimum, or night, readings observed in London, equally high, or even higher, temperatures have been recorded in seven out of the past twenty-two years. The day readings give, however, a very different result, the mean of all the maximum temperatures being  $2^{\circ}$  higher than in any April of the past two decades, while the absolute maximum of  $82^{\circ}$ , recorded on the 20th, was undoubtedly the highest April reading on record. The most remarkable feature of all in the weather of last month was, however, the great deficiency of rainfall. As regards the London district it appears that last month was by far the driest April experienced for at least eighty years past, the total rainfall being only one-tenth of an inch. The nearest approach to this was in the year 1855, when April showers yielded just double the quantity of rain experienced this year. The effects of the April drought have been so seriously aggravated by the dry weather of March that a brief review of the conditions prevailing during the whole two months may be of interest. It appears then that over nearly the whole of the eastern, central, and southern parts of England, and also in the south of Ireland, the aggregate rainfall for March and April amounted to less than one-quarter of the average, and over a considerable portion of the English districts to less than one-fifth. In London and at Cambridge there was only 15 per cent. of the normal quantity, and in the Scilly Islands only 9 per cent., while at Oxford and Dungeness the proportion was as low as 7 per cent. The remark has of late been heard that after so unusually fine and dry a spring the summer months are nearly sure to be wet and inclement, and it is therefore consoling to find from an examination of the records that gloomy forebodings of this kind have no warrant in actual fact.



— THE THORNS.—These hardy trees are in bloom everywhere, and in rich profusion. Generally they are fully a fortnight earlier than usual, for it is quite unusual to have them in full bloom in April, although at the end of it. It is not merely the Thorns, however, for we have Laburnums, Mountain Ash, Lilacs, and myriads of similar trees in full bloom. Also in April, and by the 1st of May, not only Apple but Crab bloom in all directions about London will be past its best. If the tree-flowering season is an early one it has been because of the fine weather a very beautiful one. Still, because of the dry state of the soil and the atmosphere, a brief one. All the same it bids fair to leave behind a good profusion of fruit.—D.

— HAZEL-BUD GALL MITE.—I have read the article on page 320-1 with much interest, and it is very singular that Mr. Gibbon of Seaford Grange, Pershore—who has paid great attention to the Black Currant gall mite—and I were chatting about this subject on our return from the Toddington gathering, and he was under the impression that they were the same as the Nut phytoptus. Having never met with the Hazel Nut phytoptus in this locality, it was no less strange that as I was returning home, examining fruit trees right and left on the way, I came across some bushes badly infested. I obtained specimens, but unfortunately lost them. I intend getting other specimens for investigation under the microscope. I am very much interested to see the reference to Mr. Harrison Weir and myself, and our ideas as regards canker in Apple and Pear trees being caused by *Phytoptus mali* and *P. pyri*, and if Mr. G. Abbey can help me in fathoming these matters I shall be only too pleased to send specimens in illustration. There is immense damage done to Apple and Pear trees in this locality which might be cleared up. I feel sure from long observation and much writing—as readers know too well, probably—that the damage, or canker, is not attributable to the soil or the roots, as I get rid of canker on different lines and ideas, and no amount of writing can upset facts.—J. HAM, *Redditch*.

— THE APPLICATION OF WATER TO NEWLY POTTED PLANTS.—There is no period in the growth of a plant that requires such especial care as to the application of water as when newly potted. In the case of hardwooded plants it is very necessary to be certain that the ball of soil is in a proper condition as to moisture before repotting. No amount of water given after will penetrate the old ball if it was dry at the time of repotting. If the soil in which the plant has been potted was moderately moist I do not consider it advisable to apply water until the plants have somewhat recovered the slight check necessarily caused by the operation of potting, free watering not being essential until perfect vitality is restored. A free watering would only cause the soil to become sour, and consequently unfitted to the wants of the plants. If the plants are sprinkled lightly and the pots kept moistened until the roots are in a more active state this will be found a safe method for the cultivator to adopt. When he is satisfied that the roots are becoming thoroughly active, let a good watering be given to moisten the new compost. When this has been done carefully observe the gradual progress the plant is making, and increase the supply as it becomes necessary. I want to impress particularly upon all young gardeners who have an earnest desire to become good practical men how very important it is to study carefully the watering of plants.—B. CROMWELL.

— HORTICULTURAL CLUB.—A special dinner and conversazione was held at the rooms of the Club, Hotel Windsor, Victoria Street, Westminster, on Tuesday, when the chair was taken by Sir John T. D. Llewelyn, Bart., the Chairman of the Club. The special was to entertain M. Henri Correvon of Geneva, who had delivered a lecture on Alpine plants at the Royal Horticultural Society's meeting at the Drill Hall in the afternoon, but in addition several other gentlemen from abroad were present as guests—Mons. Froebel of Zurich and the Messrs. Seidel of Dresden. There were also present of members and their friends the Rev. W. Wilks, Dr. Power, Messrs. Philip Crowley, Henry Letholm, H. J. Pearson, Harry Turner, Edward Crichtett, Harrison Weir, H. Selfe Leonard, J. Morten Smith, A. L. Wheeler, J. S. Cousens, and others. The tables were beautifully decorated with some grand masses of hybrid Rhododendrons, which the Chairman had most kindly had sent from South Wales, and which arrived in great freshness, while Mr. Webber of Covent Garden sent some specimens of Tasmanian Apples and also a dish of Ribston Pippins (English grown) to compare with the Tasmanians. It was generally conceded that, although the foreigners looked well, in point of flavour they were greatly inferior. The Chairman gave the toasts of "The Queen" and "The Visitors," to

which Messrs. Seidel, Correvon, Power, and Letholm responded. Mr. H. J. Veitch gave the toast of "The Club" and of its "Secretary," who proposed that of the "Chairman," and a vote of thanks to him for his great kindness in sending the flowers.

— THE HOME PARK, HAMPTON COURT.—The Chief Commissioner of Works has announced that the truly splendid park, which has a frontage of some two or more of miles to the Thames opposite Kingston and Thames Ditton, and extends from Kingston Bridge to Hampton Court Palace, is to be opened to the public on and from Whit-Monday next. That is a great concession, and the gain, not merely to the local residents, but also to the metropolitan millions, will be enormous. The area of the park is some 800 acres. It contains grand avenues of Lime trees, and, so far, is entirely devoid of all formal aspects in the shape of roads or pathways. Kingston, which has the finest river frontage for pleasure purposes on the Thames, thus becomes the centre of such magnificent open spaces as Richmond Great Park, the Home Park, and Bushey Park, in addition to the beautiful gardens at Hampton Court. The famous Chestnut avenue in Bushey Park is just now in exceeding beauty.—A. D.

### STROBILANTHES DYERIANUS.

WHEN exhibited at the Drill Hall on Tuesday, April 25th, by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, this new plant attracted much attention, and the Floral Committee of the Royal Horticultural Society awarded a first-class certificate for it. The plants exhibited, and from a sketch of one of which our illustration (fig. 66) has been prepared, were rather small, but sufficiently large to discern their usefulness for decorative purposes.

*Strobilanthes Dyerianus* will undoubtedly form a valuable addition to the list of stove plants. In general appearance it resembles some of the *Bertolonias* so far as the colouring of the foliage is concerned. The leaves on the plants shown were from 3 to 4 inches in length, and an idea as to their shape may be gathered by referring to the engraving. The upper surface is covered with papillæ, from which rise very minute hairs, the colour being rosy lilac with prominent dark green veins.

### NOTES BY THE WAY.

THE history of a notebook is too often the history of good resolutions made and broken. A line on this page indicates an intention to do justice to a noteworthy trade exhibit, and on that to call attention to some point in private practice which merits recognition; but neither has been fulfilled. Matters of pressing moment cause them to be passed over for the time being, others crop up in succession, and so the fierce light of publicity never beats upon them, unless, perchance, an editorial ultimatum should chance to arrive, causing a resort to be made to the forgotten pages. Nothing, perhaps, could tell us so eloquently how much we are the creatures of the hour as a notebook. It is a record of impressions which pass away as rapidly as they come, leaving behind them nothing but a memory. The revolutions of the social wheel become more and more rapid, and in its ceaseless whirl there is little opportunity for pausing to pick up the threads that have once been allowed to fall.

We do not, perhaps, feel the rush of affairs so much in gardening as in some other circles. It affects us to a certain extent, but we jog along a little more comfortably than, for example, the money men, the lives of many of whom are a misery to themselves and to everybody connected with them. After all we display better taste in worshipping a floral goddess than a golden calf. But there is less food for comment at the service of the writer. Should there be the slightest symptom of a lull in finance, behold it is destroyed by some fresh crash or more than usually brazen and colossal swindle. The financial writer has rarely to cast about for subjects, with or without the notebook. He generally has an extensive collection from which to choose, affording free scope for his talents, and often of painful interest to a large section of the public. The gardening scribbler fishes in calmer waters and hooks more gentle prey. His notes are quiet instead of exciting, and awaken at the most a mild interest. His subjects do not involve the prosperity of his readers. In short, he writes peacefully (save on certain occasions) on a peaceful art, and it is good indeed that it should be so.

Duke of Buccleuch is a noble Grape, but it is not so often seen in good condition as to make an example of strikingly successful practice unworthy of mention; on the contrary, its character is sufficiently well known to render instances of success particularly interesting. The Duke is aristocratic by name, and is generally held to be decidedly aristocratic by nature, requiring special treatment to bring out its good qualities, but that it is not always so exclusive in its tastes is proved by the manner in which it flourishes and fruits at The Grove, Great Baddow, Essex, the charming residence of Robert Miller, Esq., under



the care of Mr. William Picksley. It shares a span-roofed house about 50 feet long and 20 feet wide, with such a heterogeneous mixture as Madresfield Court, Mrs. Pince, Alicante, Gros Colman, Black Hamburg, Muscat Hamburg, Black Prince, and Buckland Sweetwater. It was planted about twelve years ago, and the roots inside the house having access to an outside border. Up to three years ago the Vine was cut down annually, but Mr. Picksley did not continue the system when he took charge, and the change in the Vines under his management is very remarkable. Two rods have been taken up, reaching the ridge in three stages. The Vine is fruited on laterals managed on the usual spur system. Last year 29 lbs. of Grapes were cut from a length of 15 feet of rod, and notwithstanding that this was somewhat heavy work the Vines have again a wonderfully fine show, and promise to bear a magnificent crop. The strength of the laterals is very striking. They are long and exceedingly stout, many being half an inch in diameter at the base. The foliage, too, is finely developed. It is quite evident that the holding soil suits the Vine, but nevertheless Mr. Picksley deserves the heartiest

Chaffey Brothers has organised "down under." I wonder if Mr. A. H. Pearson is going to have anything to say about his Russians at Chilwell this year. Hitherto they have not fruited.

Accounts have reached me of Mr. Gumbleton's Tulips which have caused the one little feeling of discontent with the season that I can bring myself to entertain. Had they not been hurried on so quickly by the wonderful weather, but had bloomed at the average season, a long deferred trip to the Emerald Isle might have become an accomplished fact, and had it been possible of arrangement be sure that a visit to Belgrove would have formed an important feature of it. Those who are acquainted with the Irish amateur, and he is not an infrequent visitor to English shows and nurseries, are aware that he has his peculiarities, one of them being an outspokenness not always relished; but he is a true florist, and no pains seem to be too great when the achievement of some special object is in view. Lately he has set his heart on having an altogether exceptional display of Tulips, and he has shirked



FIG. 66.—STROBILANTHES DYERIANUS.

commendation for the way in which he has managed it. He has succeeded where many other good fruit growers have partially or completely failed. It will be of interest to note the future career of Mr. Miller's Vine. It is more than likely that if a time for severe restriction came it would begin to lose its vigour, but it is wisely being allowed to "have its head," and is now making its way down the other side of the roof. When it gets to the bottom it would not be a bad idea to let it work back again.

There seems to be an exceptional set of Apricots this year. Wanderings into various districts reveal the pleasant fact that fruit is thickly clustered on most of the trees, and the crop of 1893 should be a fine one. In some instances the set is quite remarkable, and will necessitate severe thinning. When to do this is the point. If done at once the fruit removed is worthless, but if some are left to swell until on the point of stoning they can be utilised for tarts and other culinary purposes. The mere addition of a little pulp will not hurt the trees, and so long as the strain of stoning is saved, the fruit may be left on as long as possible. I do not know if any readers of the *Journal* have tasted imported Apricots, but some fruit received from the Irrigation Colonies in Australia was really excellent. It had not a Moorpark flavour, but it was very good for all that; and Apricots on the table in winter and early spring make a most acceptable addition to the bill of fare. We shall hear more yet of the enterprise which the engineering skill of the

neither trouble nor expense in order to produce it. That I happen to know, for Mr. G. is one of those men who like others with corresponding tastes to share his pleasures. One large border in his garden, containing nearly 1600 bulbs in eighty-eight varieties has, I understand, been a dream of beauty, and Tulip lovers will be prepared to accept the description without cavil. If the early Tulips have not the special interest and qualities of the late varieties, about some of which we shall doubtless be shortly hearing something in these pages, they are still both beautiful and varied, capable of giving very rich effects in spring flower gardens.

At a recent meeting of the Royal Horticultural Society Mr. Bunyard pointed out to me a tiny plant in a collection of hardy flowers on which he said one firm had spent a round hundred pounds in vain attempts to establish it, and which another could only manage by annual importations. I venture to think that such plants should be done without. What is there in *Eritrichium nanum* that money should be poured out upon it like water? It is not unattractive, but compared with *Myosotis dissitiflora* it is a weed. Surely it is fostering a false taste to encourage attempts to cultivate plants which are conspicuous only by their fastidiousness. To say that a firm can only maintain a supply by annual importations practically means disappointment to every buyer, for if skilled growers cannot succeed with it what chance have others? Attempts to cultivate such plants as this by those who know its



character, are made, not to find pleasure in its beauty, but to outdo others. It is not an artistic but a sporting matter. It is hardly for an Englishman to take exception to wholesome rivalry, but there is not the healthy tone about this kind of thing which one can appreciate fully.

Was there ever such a dearth of "places" in the spring as exists this year? There seems positively to be nothing moving, and the sickness of hope deferred must be finding its way to the hearts of those who are waiting for something to turn up which will give them an opportunity of getting into harness again. Of all men, gardeners are the least anxious to eat the bread of idleness. They love their profession and find joy in their labour. They do not fight for high wages or special privileges. A tithe of the conditions demanded by the average trade unionist would more than satisfy them. It is hard, therefore, that those who are able and deserving should have to stand idle in the market place, waiting and still waiting for the openings that do not come. Why is it? Last year such a state of affairs could have been understood, for the cloud that gathered over the heads of the reigning family spread and had far-reaching influences, but this season no such calamity has occurred to disarrange the springs of society. It is likely enough that the financial troubles of which all men wot are largely responsible for the stagnation. Crash after crash has come in quick succession, and one establishment after another has been reduced to meet the exigencies of altered circumstances. Let us hope that the lowest depth has now been reached, and that a feeling of security will gradually grow up to replace the uncertainty and suspicion of the present. Foreign mines and foreign rails may seem to have but little connection with British gardening, yet swirls in the financial stream extend far beyond the limits of everyday vision.—W. P. W.

### TOMATO GROWING.

[By Mr. E. D. SMITH: read at a meeting of the Sheffield Chrysanthemum Society.]

PARALLEL with the advance of the Chrysanthemum the Tomato has risen in popular favour. The reason of its popularity is not far to seek. It is an easy plant to grow, and the results secured generally compensate for the time and trouble expended in its cultivation. Not only can fruit be secured which is attractive and ornamental in appearance, but possessed of highly nutritive qualities, establishing it at once as a most important article of diet.

Viewed commercially from a wide standpoint the cultivation of the Tomato has become to be a stupendous industry particularly in the United States of America, where, without much trouble and under outdoor conditions, immense crops of fruit are produced, the surplus of which by the process known as "canning" is distributed in the markets of the world. Here, in this country, but chiefly under glass, many industrious men succeed in producing profitable crops, which for excellence of flavour, beauty of form, and richness of colouring, perhaps surpass the outdoor produce of more favoured climates. In fact, there are very few lovers of Tomatoes who do not prefer English grown fruit to any that reaches here from foreign parts, this being explained when we know that fruit that has to travel must be gathered before being ripe, consequently the flavour is deficient.

### RAISING TOMATO PLANTS.

As a rule, seedlings form the best plants. For the main crop the best time to sow the seed is early in March. Early crops can be had by sowing the seed in January, but progress is somewhat slow, and requires extra care, heat, and attention. Tomato seed germinates quickly in a temperature of 60° to 65°. Sow the seed thinly on the surface of 6-inch pots, well drained, and filled firmly to within an inch of the rim with light sandy soil and leaf mould. Water gently, allowing the moisture to drain away, then scatter the seeds not less than an inch apart, covering lightly with soil, gently pressing it level. Darken the pot with glass and paper until the seedlings appear, standing or plunging the pots on a moist base of cocoa-nut refuse to prevent undue drying of the soil. Further watering will not be required until the seedlings appear. Light becomes absolutely necessary to Tomatoes immediately the first seed leaves protrude above the soil. The best place for them at this stage is on a shelf, close to the glass, in a warm structure. In a temperature of 60° to 65° they will grow rapidly. In a shady position and a confined temperature the seedlings lengthen unduly; instead of being sturdy, erect, and showing stem roots, they are flabby and soft.

When four leaves have been made they are ready to put singly in 3-inch pots, or several round the edges of larger pots. Sink the seedlings in the soil up to the pair of seed leaves. The advantage of having kept the little plants sturdy up to this point will be seen in the tendency of the young stem to throw out rootlets, especially at the base, also higher as the stem strengthens. These additional roots at this period coming to the assistance of the plants are of immense advantage in building up strong plants, which will produce flowers and set fruit early, continuing to do so throughout the season. The Tomato is naturally a soft-wooded plant, and growth must to a certain extent be solidified as it is made—not as in the case of some plants, first make the growth, to be afterwards ripened. This shows the importance of air during every stage of growth. Any lack of this important element is at once seen in soft growth, long-jointed and weak, but a due amount of it buoyant and free, aided with light and heat, will produce good plants. It is no mere assertion to say that light, air, and water are of more importance than the nature of the

soil. The Tomato will flourish in a very small quantity of the latter, but of the former it must have no stint.

### POTTING THE PLANTS.

Passing on now a stage further, it will be found that when the young plants have strengthened themselves in small or other pots they are usually large enough to be transferred to 5-inch pots, from which size they are the most conveniently taken for the final potting or planting out. Drain the pots lightly, and in potting place the plants low down as for previous shifts, so that some portion of the stem is again buried in fresh soil. The compost for this shift may be fairly rich and good, turfy loam being its main constituent. A little bonemeal, at the rate of a pound to a bushel of soil, may be added in preference to decayed manure, also a little sand and burnt refuse. Pot firmly, though not absolutely hard. Place the plants on a shelf close to the glass in an average temperature of 55° to 60°. Both the soil surrounding the roots and the fresh compost being moist, there will be no need of watering for a day or two if the weather be dull, but if sunny water must be given. I find shading to be unnecessary, even if bright sunshine follows closely on repotting. Growth will soon be rapid, and care must be taken to afford water as required, this often claiming attention twice a day in very bright weather.

### FINALLY POTTING OR PLANTING OUT.

As soon as roots are plentifully formed, and the plants are still vigorous, they should be moved to their fruiting positions. It is the custom of some to defer this until the first bunch of fruit has set, but in my opinion it is not the wisest course. Directly Tomatoes become root-bound in small pots the main growth extends in a weaker manner, the succeeding bunches of bloom also suffering in size and vigour. Therefore it is much the best plan to finally pot or plant out before the latter conditions are brought about.

Pots 11 or 12 inches in diameter are the best for fruiting plants; larger or smaller sizes than those are not desirable. When smaller enough support cannot be given, while in larger stronger growth is made in the course of the season than is wanted. Excessively vigorous growth is always liable to be fruitless. Drainage for the fruiting pots may consist of a good sized oystershell placed concave side downwards over the large central hole in each, placing over this a small handful of various sized potsherds, finishing off with a layer of fibrous turf picked from the compost or prepared specially. On this, before introducing any soil, place the plant turned out from its 5-inch pot. The object should be to have the plant as low as possible, because it is an error, and would not conduce to good results, if the whole space within such large pots was at once filled with soil. Just sufficient ought to be added to surround and cover the ball of roots, making it firmer than in previous pottings. The limited amount given is ample for a time, usually until the first bunch of fruit has set and is swelling, when more may be applied. Only a slight top-dressing of a couple of inches is given each time. The same kind of compost may be used for the final potting or planting out as recommended for the previous potting.

In planting out Tomatoes the error of giving a root run too wide and deep must be avoided. I like to form a border for Tomatoes on a hard bottom such as is afforded by a slab or slate stage, with a slight fall to the front, so that superfluous water can run quickly away. In such a position no drainage is required. The depth of soil at first need not be more than 4 inches. The top-dressings subsequently given will raise the hulk a little higher during the season. Contract the width of the border as well as the depth, 14 inches being a good width. The size of plant for placing in fruiting positions is important. When turned out of pots larger than 5-inch into a border too much soil has to be introduced, as it is obvious the balls of roots must be covered. For planting out I prefer plants from 4-inch pots. Quite sufficient soil can then be packed round and made firm without overloading.

Never pot or plant out Tomatoes unless the soil and roots are thoroughly moist. The fresh soil also should be in that intermediate state of moisture, which gardeners know so well to be neither wet nor dry. Surrounded with this friable and sweet material the roots soon make progress and take full possession.

(To be continued.)

### THE ROYAL GARDENERS' ORPHAN FUND.

#### ANNUAL DINNER.

As briefly announced in our last issue the supporters of the Royal Gardeners' Orphan Fund held their annual dinner at St. James' Hall, Regent Street, W., on Wednesday, April 26th, under the distinguished presidency of Baron Ferdinand de Rothschild, M.P. Although but yet in its infancy, this excellent charity has made considerable progress during the comparatively short period it has been in existence, and as on previous similar occasions, the festival was a great success. About one hundred gentlemen were present, and amongst others we noticed Sir T. Lawrence, Bart., Sir J. T. D. Llewellyn, Bart., Rev. W. Wilks, Major Foster, Major Sexehy, Lieutenant Pott, Dr. Walker, H. J. Veitch, Esq., N. N. Sherwood, Esq., P. Crowley, Esq., Messrs. T. Manning, A. G. Manda, F. Sander, G. J. Ingram, H. E. Milner, H. Turner, H. Williams, E. D. Shuttleworth, A. F. Barron (Secretary), J. T. Anderson, J. Asshee, H. Balderson, W. Y. Baker, P. Barr, F. Bausé, G. Bunyard, R. Cannell, W. L. Corry, W. W. Cousens, H. J. Cutbush, W. Denning, J. Douglas,



H. P. Glendenning, H. Herbst, W. Iceton, P. E. Kay, F. Q. Lane, W. Marshall, G. Monro, A. Moss, W. N. Nutting, W. Poupert, E. Rochford, S. M. Segar, J. Smith, G. F. Strawson, J. Sweet, O. Thomas, A. W. G. Weeks, J. Wills, J. Willard, and J. Wimsett. The tables were beautifully decorated with flowers and fruit kindly supplied by Messrs. B. S. Williams & Sons, J. Laing & Sons, F. Sander & Co., Wills and Segar, H. Cannell & Sons, J. Walker, G. Wythes, and J. Smith.

The Chairman, after the customary loyal toasts, proposed the toast of "Success to the Royal Gardeners' Orphan Fund," associating with it the name of Sir J. T. D. Llewelyn, Bart. Baron Rothschild said he need hardly tell the company what the nature of the Institution was, because they were all acquainted with it. It was, however, comparatively speaking, an infant among the many charitable institutions of the great metropolis; it was not only an infant, but it might also be described as a dwarf, but age would diminish the fault of its being an infant. (Hear, hear.) They were assembled together that evening to obviate that defect in the stature of the institution, and by their generosity to enable it to increase its size to the proportions of a giant. The infant had, in his opinion, done very well during the first few years of its existence. He was pleased to know that during the past year it had given weekly allowances of 5s. to fifty-six children under fourteen years of age, which distribution represented an outlay of £750. (Applause.) That was, he considered, a most creditable piece of work. The metropolis abounded with not only hospitals, but homes and charitable institutions of every kind. He knew that that evening there were several dinners being held in the City in aid of similar institutions, and the pockets of the benevolent were always being called upon to keep pace with the growing demands of charitable causes. In spite of these numerous dinners, however, they were gathered together that evening in the interests of the Royal Gardeners' Orphan Fund, and he looked forward confidently to an excellent result in the shape of subscriptions. (Hear, hear.) The charity, as they all knew, had been established for the maintenance of gardeners' orphans, and although the occupation of gardeners was a good and healthy one, yet they were exposed to certain risks which often left children fatherless, and therefore orphans. He did not know what the statistics of gardeners' lives were, but in the proper execution of their work in hothouses, and during the night time, gardeners caught chills, and died sooner, perhaps, than might be expected. Gardeners were, moreover, frequently transferred from one place to another, and were thus compelled to reside in localities that were perhaps the reverse of beneficial to them. He was not aware if the children of gardeners travelling about the world in the course of their occupation were included among those benefited, but if not, he certainly thought they ought to be. Who knows, the Chairman said, but that the men who had administered to our luxury in gardening had contracted some disease? For instance, he had an Orchid in his coat that evening, and no one knew whether a man had not died in the discharge of his duty in some foreign land; if it was so, the children of that man should be as well looked after and cared for as those of a gardener who had died at home. (Hear, hear.) He considered the opportunity of allowing the orphans a sum of £10 when the weekly allowance ceased, when the children had arrived at the age of fourteen, a most excellent measure, for it was just the time when boys were becoming young men and when girls were growing into womanhood, that £10 would be almost a means of salvation to them. It may happen that £10 judiciously laid out at that period of a boy's life may be the means of producing some great man to whom they would be indebted. He did not believe there was a charity throughout the length and breadth of the country which was more economically administered than this Fund. (Applause.) By a reference to the report they would see that the cost of the Institution had been quite trifling compared with the expenses of others. He was bound to say, therefore, that the balance-sheet was a credit to the charity. At the dinner last year the handsome sum of £1000 was subscribed, and the Chairman on that occasion possessed some rich relations and friends in the City, but although he had done his best his influence had not been quite so successful as that of Sir James Whitehead. Last year, continued the Chairman, his friend Mr. Veitch celebrated his silver wedding, and in memory of that auspicious occasion he presented the Fund with a splendid donation of £500. (Applause.) He hoped that other gentlemen present had that year celebrated their silver wedding, and looking around him he did not think that any of them had celebrated their golden wedding yet, or he might look perhaps for a donation of £1000. (Laughter.) He trusted, however, that Mr. Veitch, when he celebrated his golden wedding, which he sincerely hoped he would do, would make a donation perhaps of £1000. (Applause.) He would conclude by pointing out that if each of the hundred gentlemen present added four times 5s.—he would not call it a pound—it would mean an additional £100 to the sum which had been promised. If gentlemen were to realise this fact it would be the means of relieving the sufferings and raising the hopes of many a young man and many a young woman. The Chairman subsequently announced that Mr. Sherwood had handed him a cheque for £100 as a donation to the Fund. (Applause.)

Sir J. T. D. Llewelyn, Bart., in responding to the toast, said the institution was doing an immense amount of good, and as one of the Trustees he was sure no one had the welfare of the Fund more at heart than he had. It ought to be remembered that the parents of the orphans they were called upon to assist had taken their share in gardening. The profession of gardening had made very rapid strides during the past half century, and no one could say where it was going to end, to what

extent it would grow, and what further improvement would take place in fruit and flowers and vegetables. Kew had set a valuable example in horticulture; indeed, it had been the means of greatly improving the welfare of the people living in the colonies, and the value of those colonies to a very appreciable extent. (Hear, hear.) This, he thought, was sufficient evidence as to the beneficial results of gardening, and those who represented the "upper ten" of horticulture should not forget that it was part of their duty to make the existence of orphans a little more tolerable. The work which had been done through the Fund proved how much lay before it in this direction. In 1887 the Fund was started, and a commencement was made with the election of eleven children. The number grew in the following year to thirty, and from thirty to fifty, and last year eight more were elected, making a total of fifty-eight, and only two had arrived at the age of fourteen. Fifty-six children were therefore on the books of the Fund, and if it progressed in the same ratio year by year there was a great future before it. (Cheers.) All should put their shoulder to the wheel, and much more might then be done. The most satisfactory feature during the past year's operations was that H.R.H. the Princess of Wales had graciously consented to become Patroness of the Fund, expressing at the same time a hope that the association of her name with it might be the means of benefiting it. This had clearly been the case, for their excellent Secretary, Mr. Barron, had now secured the Duke of York and the Duchess of Albany as life subscribers; that was the first fruit of the Princess of Wales being Patroness of the Fund, and he doubted not that it would bring a further accession of supporters. (Applause.) The handsome donation which Mr. Veitch presented to the Fund could not fail to have a good influence upon the leaders in the horticultural world, and he confidently looked forward to their patronage. He thought also they might approach the professional gardeners of the country. During the five years the Fund had been in existence the sum of £6570 had been invested. The value of such an invested sum as that could not be over-estimated, especially in the future if subscriptions did not come in so readily, although he hoped the day was far distant when they would be compelled to touch the capital, at the same time it was most desirable to have such a sum invested. (Cheers.)

Sir Trevor Lawrence, Bart., gave the next toast, that of "Gardeners and Gardening." In doing so he said the British people could fairly lay claim to the possession of the most beautiful gardens and the most skilful gardeners. (Hear, hear.) He had travelled about a great deal, and he had frequently been asked to go and look at some garden that was thought beautiful in the locality he might for the time be staying; but although he had seen some fine gardens he could honestly say he had never seen anything on the Continent equal to what could be found in this country—(applause)—indeed, he believed the British had established throughout the world their reputation for the highest form of cultivation and the good standing of the calling of a gardener. Whether one went to the northern or southern part of these isles the same thing was noticeable. The sentiment applied also to cottage gardens, which sometimes succeeded in producing plants which the park or mansion could not do, and one of the great attractions about a garden was that whether it was large or small the owner felt an equal pride in it. He thought there was as much pleasure derived by the owner from a few plants in a window as from a large garden. (Hear, hear.) Referring to his recent visit to the Ghent Quinquennial Sir Trevor remarked that although the Show was a very good one, and the Belgians the most hospitable race in the world, he had no hesitation whatever in declaring that English horticulturists could do equally as well, and he ventured to say a great deal better. (Hear, hear.) He trusted that as long as England lasted the beauty of her gardens would be maintained, and, further, that the interests of such an excellent and most intelligent body of men as the British gardeners would never be forgotten. (Applause.)

N. N. Sherwood, Esq., responded to the toast, and said he almost felt the wrong man in the right place. He could not call himself a gardener, but he rather wished he was able to do so, after hearing the high praise Sir Trevor Lawrence had showered on British gardeners. He expressed a hope that gardeners would always gain the approbation of gentlemen like the Chairman and the proposer of the toast, and that the Fund would ever receive the support and sympathy of such distinguished men. He was sure that gardeners in this country could hold their own. It was quite true that gardening had made immense progress during the past fifty years, and it was not to be surprised at when they remembered that almost every little village and provincial town in this country had its flower show; and then looking at the magnificent show that was held annually at the Temple, he thought gardeners could not help feeling proud of their calling. (Hear, hear.) With respect to the Fund itself, this happened to be the Jubilee year of the firm he represented, and he asked the Committee to accept a cheque for £100. (Applause.) He knew of a very sad case in which a poor gardener had recently died and left a family of seven children. He wished to pay for the maintenance of one of those children, and would be perfectly willing to pay down in a lump sum the amount which was necessary for the maintenance of the little orphan for the next seven or eight years. (Applause.)

Dr. Walker proposed "The Chairman," and briefly remarked that they all knew that Baron Ferdinand de Rothschild was always ready with his assistance when the interests of horticulture were at stake, although he did not give that indiscriminate charity which did more harm than good.

The Chairman in responding said that he had always taken great interest in gardening, and after many dreary hours of parliamentary duties he fully appreciated his garden. Mr. R. Dean submitted the



toast of "The Visitors," to which Mr. J. Collingridge and A. White responded.

Mr. A. F. Barron, the Honorary Secretary, announced that the subscriptions promised that evening amounted to £490. The donations included—Baron F. de Rothschild, £50; Messrs. Hurst & Sons, £100; Messrs. Rothschild, £25; Sir John Llewelyn, Bart., £10 10s.; Sir Trevor Lawrence, Bart., £10 10s.; Mr. F. Sander, £18 18s.; Messrs. J. Veitch and Sons, £10 10s.; Mr. G. Munro, £14 14s.; Mr. J. Wills, £10 10s.; Mr. W. Marshall, £10 5s.; Mr. J. Wimsett, £10 10s.; Mr. R. Dean, £10 10s.; Mr. F. Q. Lane, £9 8s.; Mr. A. W. G. Weeks, £8 1s.; The Thames Bank Iron Co., £9 9s.; and numerous other smaller sums from various supporters of the Fund.



#### ROSE SHOW FIXTURES IN 1893.

- June 20th (Tuesday).—Westminster (N.R.S.).  
 „ 22nd (Thursday).—Ryde.  
 „ 28th (Wednesday).—Clifton,\* Earl's Court, and Richmond (Surrey).  
 „ 29th (Thursday).—Eltham, Newport, and Windsor.  
 July 1st (Saturday).—Crystal Palace (N.R.S.).  
 „ 4th (Tuesday).—Bagshot, Canterbury, Diss, and Gloucester.  
 „ 5th (Wednesday).—Croydon, Dursley, Ealing, Hereford, and Lee\*.  
 „ 6th (Thursday).—Bath, Farningham, Norwich, and Sutton.  
 „ 7th (Friday).—Hitchin.  
 „ 8th (Saturday).—Reigate.  
 „ 11th (Tuesday).—Harleston and Wolverhampton.†  
 „ 12th (Wednesday).—Earl's Court and Tunbridge Wells.  
 „ 13th (Thursday).—Worksop (N.R.S.), and Woodbridge.  
 „ 14th (Friday).—Helensburgh.  
 „ 15th (Saturday).—New Brighton.  
 „ 20th (Thursday).—Trentham.  
 „ 21st (Friday).—Ulverston.  
 „ 22nd (Saturday).—Manchester.  
 „ 25th (Tuesday).—Tibshelf.  
 „ 27th (Thursday).—Halifax, and Southwell.  
 „ 29th (Saturday).—Bedale.

\* Shows lasting two days.

† Shows lasting three days.

I shall be glad to receive the dates of any Rose Shows not mentioned above for publication in my next list of fixtures, which will be issued early in June.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

#### PARIS GREEN FOR ROSE CATERPILLARS.

HAVING again proved the efficacy of this on Rose bushes, a reference may be of interest to some. A friend happened to be in my garden the other evening, and noticing the vigour and healthy appearance of the foliage, exclaimed, "What have you done to your Roses to produce such foliage?" I told him that I had applied poultry manure as a top-dressing in winter, and a spraying of Paris green to kill the grubs in spring. He remarked he could not obtain such, do what he might. There is something one cannot understand about the prices charged for Paris green. If I send to Worcester I am charged 2s. 6d. per lb., or 4d. per oz. in less quantities; at Evesham, 1s.; and a friend informs me he gets his at 9d. per lb. from a first-class house.—J. HIAM.

#### ROSES AND ROSARIANS.

IN my article bearing the above title in your last issue there is a typographical error which I hope you will kindly allow me to correct. In this special instance "so" has been substituted for "if," and thereby my previous arguments are practically undermined, and I am rendered logically inconsistent, which I have no special desire to be. The expression in which this error occurred should read thus: "If the great English, Scottish, and Irish rosarians are unanimous in pronouncing this magnificent Rose (Mrs. Paul) to be a pure Bourbon, I accept their verdict unquestioningly."

But on this point they are not perfectly unanimous, for several of them, as I stated in previous contributions, class this stately and imposing variety as a Hybrid Bourbon. I am quite disposed to admit, however, that the law of variation may have had something to do with the formation of Mrs. Paul; for in accordance with this law, and especially I think in the case of Roses, attributes and characteristics often seem to pass over the second generation, and are found in the third. Of course this manifest eccentricity of operation on the part of Nature may entail for the recipient either weakness or vigour, either a virtue or a vice. The former influence has manifestly been the experience of Mrs. Paul.

With reference to my theories regarding the parentage of Roses, and the phrases I have made use of in describing these, Mr. Cranston of Hereford writes to me as follows:—"Seedlings are, of course, as you have indicated, distinct from 'sports'; but a variety producing either is the parent under any circumstances." I think this decision should be held as conclusive. I am glad to have the support of so great a rosarian and so accomplished a writer upon Rose cultivation. Nor, I may add,

does he at all object to my previous assertion that the finest Tea and Noisette Roses produced in England are grown under glass.

I learn that these are at present most impressive at Waltham, and I only regret that I cannot be in London in time to see Mr. Paul's superb Roses in perfect bloom. He informs me in his latest communication that they are three weeks earlier than usual this year. I can confirm this assertion, for even in my own garden there are already many Roses visible on Gloire de Dijon, Marie Baumann, La France, Lady Mary Fitzwilliam, Etoile de Lyon, Belle Lyonnaise, William Allen Richardson, and Maréchal Niel.—DAVID R. WILLIAMSON.

#### PEAR PROSPECTS.

I AM not a large Pear grower, but I have besides those on my walls some large trees of Williams' Bon Chrétien, Pitmaston Duchess, Comte de Lamy, Beurré de Capiaumont, and Bishop's Thumb. They are all as full as they possibly can be, and a vast number fall off, but I have never in my twenty-five years' experience seen them so well set, but then the lowest reading of the thermometer 4 feet from the ground was 31° on the 13th.—D., *Deal.*

YOU ask for reports as to Pear promise. I looked in the other day upon Mr. E. Bennett, who has recently taken the extensive private walled-in gardens at Hampton Court Palace, and found on most of the standard trees there, as well as those on walls, quite a heavy set of fruit. I could not refer to varieties, for Mr. Bennett does not yet know what they are; but as these gardens are within a couple of hundred yards from the Thames the full crop is all the more remarkable. Plums in every case there are also a heavy set. I learnt over in Middlesex that Pears promised a fair crop in the market gardens. "I think," said an old and experienced grower, "we shall have a good fruit crop all round this season." That is comforting, although it is certain that rain is most badly needed.—A. D.

THE crop here promises to be the best I have seen for the last fifteen years, especially on the unprotected trees, growing as bushes in the open. Such varieties as Doyenné du Comice, Maréchal de Cour, Williams' Bon Chrétien, Comte de Lamy, Duchesse d'Angoulême, Beurré Clairgeau, and Catillac are very full of promising fruit. All varieties growing against walls, whether cordon or horizontally trained, likewise promise abundantly, especially the latter.—E. M., *Swanmore Park.*

I NOTICE several varieties of Pears, which, although well filled with blossom, are only going to carry very moderate crops. The Pear weevil has been especially destructive, also the Gooseberry caterpillar, which has completely destroyed a row of splendid bushes in a cottage garden near where I reside.—R. P. R.

#### ROYAL HORTICULTURAL SOCIETY.

APRIL 25TH.

SCIENTIFIC COMMITTEE.—Present: Mr. McLachlan (in the chair); Mr. Blandford, Prof. Green, Rev. W. Wilks, Mr. Wilson, Dr. Bonavia, Prof. Müller, and Rev. G. Henslow, Hon. Sec.

*Eucalyptus Galls.*—Mr. Blandford reported upon his examination of the large woody galls sent to the last meeting by Baron von Müller from Australia (wrongly referred to Acacia). They appeared to be formed at the base of the leaves. The gall was occupied by a large solitary coccid, the head being turned away from the orifice by which the larvæ escaped. Mr. McLachlan observed that coccids usually live externally on plants; but for some time a group has been known, including several species, which form galls on Eucalyptus in Australia, the coccids being sometimes upwards of an inch in length.

*Bardfield Oxlips Changing Colour.*—Rev. C. W. Dod sent a clump bearing several umbels of yellow and one of red flowers with the following communication. Referring to the specimens brought to the last meeting by Dr. Masters he writes: "I have during the last few years investigated many of these cases in which I used to believe, but I have come to the conclusion that if a plant growing in the same soil and position, and not having been drugged, seems to have changed the colour of its flowers, *aliquis latet error*. In the particular case of the Bardfield Oxlip, which I grow in many spare corners of my garden, I find the duration of life of the plants to be about four years. Seedlings take the place of those that die, and are often amalgamated with them, flowering all together; so that it seems that one with dull red flowers (always the first departure from the typical colour in the *Primula veris*, L., class) appears to be part of the same plant which is bearing yellow flowers. By the next year the yellow-flowering plant is probably dead, and the red-flowering one has quite superseded it." On carefully washing the mould away from the "clump" sent by Mr. Dod it was readily resolved into seven perfectly distinct plants, six bearing yellow flowers and one being dull red flowered, thus entirely corroborating Mr. Dod's account of the origin of a change of colour being by seed only.

*Erythronium grandiflorum*, giant form, &c.—Mr. Wilson exhibited a flowering spike of this plant, 16 inches in height, with leaves proportionally large. It appeared first in 1892 among some seedlings, and is considerably larger in the present year. He also showed a specimen of *Narcissus triandrus*, remarkable for its strong growth, bearing four



instead of the usually two flowers; also an umbel of a Primula, with the flowers dissociated along the peduncle.

*Myosotis Proliferous and Many-petalled.*—Dr. Bonavia exhibited sprays of this variety, which is now in the market. The petals are often as many as nine or ten in number, though no flower appears to be "double." Two or three flowers are sometimes fused together as in Tomatoes. An examination of this variety made by the Secretary showed that instead of the separate flowers along a common peduncle, as in the ordinary Forget-me-not, each flower is represented by a raceme, a proliferous condition sometimes seen in Solomon's Seal, Bluebells, &c. The individual flowers were characterised by "symmetrical increase," the sepals, petals, and stamens being multiplied uniformly. The pistil was malformed, consisting of a conical structure, the stylar tube being open above, with a rudimentary stigmatic border. About eight ovules were arranged in a circle at the base of the ovary, the placentation being thus free central. The terminal flower on the main axis was very remarkable, recalling somewhat similar malformations often seen in Foxgloves, Larkspurs, &c. It consisted of a whorl of many sepals, within which were five clusters, consisting of oval scale-like carpels, with a row of glands outside them; then followed in succession within the scales a mass of petals and stamens. Five similar carpellary scales then were seen around the axis, within which all round were numerous abortive ovules. The central axis consisted of a flower turned inside outwards, the members of which being in a reversed order—viz., stamens on the outside of the tube of the corolla, the corona being thus on the exterior surface, the petal lobes over-arching them outwards, while the centre was occupied by a tuft of erect sepals. Information as to the origin of this remarkable variety and the name of the raiser is greatly to be desired.

*Peach Leaves Malformed.*—Rev. F. C. Dillon sent leaves which were curled, and with a blistered appearance, the lower epidermis peeling off. It was thought to be due to a chill by east winds, and not to the presence of fungus or insects. They were referred to Prof. Green for further examination.

#### THE NARCISSI EXHIBITION AT BIRMINGHAM.

THE long spell of hot weather upset this Exhibition very considerably, and only about one-fifth of the prize money offered was won. Had it not been for the very early season, there would have been a large display.

Mr. J. W. Wilson, South Cave, East Yorkshire, was the only exhibitor in the cut bloom classes, and he had in his collections fine flowers of *Incomparabilis Eclipse*, Sir Watkin, Harry Collins, a very distinct variety; *poeticus tripodalis*, *Horsefieldi*, *bicolor grande*, and others. The only exhibitor of Narcissi in pots was Professor Hillhouse.

There were some very praiseworthy honorary exhibits of Narcissi, which made up a small and select display. Messrs. Pearson, Chilwell Nurseries, Nottingham, had an excellent collection, which formed a striking feature, and to which a silver medal was awarded. Many of the choicer kinds were in this contribution, and it was a surprise that so many could have been kept back for the Show. In this collection were that very fine new white variety *Madame de Graaf*; also a superb deep yellow trumpet, *Glory of Leyden*, with lighter segments, a wonderfully fine flower of excellent form and substance, and to which a first class certificate was awarded. Mrs. Vincent and Mrs. J. B. M. Camm are two very fine whites, and a new white variety raised by Mr. de Graaf, named Mrs. Pope, was also in this collection. Other fine kinds were King of the Netherlands, *Princess Mary*, *Goliath*, and *Frank Miles* of the *Incomparabilis* section; *P. R. Barr*, a beautiful yellow of the *Empress* type; *Leedsii Duchesse de Brabant*, white, with pale sulphur cup, changing to white, and very free blooming; *Leedsii Mrs. Langtry*, a pale creamy white; *Poeticus grandiflorus*, and *poetarum*, the true Poets' Narcissus.

Mr. Robert Sydenham, Birmingham, staged a bright collection, amongst them several groups of very fine *Burbidgei*, Mrs. J. B. M. Camm, *Nelsoni major*, and others. *Barri conspicua* very highly coloured, and Mr. Sydenham also staged fine blooms of the various kinds of Parrot and other Tulips.

The Edgbaston Botanic Gardens contributed a group of Narcissi, chiefly such as *Burbidgei*, *Mary*, and *Robin Hood*; *Incomparabilis Glow*, *Marginata*, *Cynosure*, and *John Stephenson*; *Bicolor James Walker*, *grande* and others.

Mr. T. Jannock, Dersingham, King's Lynn, staged Lily of the Valley plants in jardinières, baskets and pyramids, a superb display to which a silver medal was awarded. Messrs. Hewitt & Co., nursery and seedsmen, contributed Narcissi and hardy border flowers. Messrs. Pope & Sons, nurserymen, staged a superb bouquet of Narcissus blooms which obtained the first prize.

#### GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, London, W.

#### HIBBERTIA PERFOLIATA.

THIS interesting plant is now flowering in most gardens where it is grown, although unfortunately there are exceptions to the rule, inasmuch as *Hibbertia perfoliata* is not generally cultivated. The *Hypericum*-like flowers are bright yellow, and being freely produced renders the plant very attractive. Several species of *Hibbertia* are grown in conservatories, usually trained to pillars or the roof, but *H. perfoliata* is more compact in habit, and, like the small-flowered *H. Reedi*, is better suited for



FIG. 67.—HIBBERTIA PERFOLIATA.

culture in pots. The flowers are not of long duration, but so many are produced and in such close succession that the plant continues ornamental for a considerable time.

VINES IN GERMANY.—It is not, perhaps, generally known, says *Nature*, that the largest wine-growing district in Germany is Alsace-Lorraine. According to a report forwarded to his Government by the French Consular Agent at Frankfort, while the Wiesbaden Regency has only 7300 acres planted with Vines, which in 1890 yielded 1,644,040 gallons, the Coblenz Regency (18,950 acres) giving 3,755,220 gallons, that of Trèves (8980 acres) giving 1,832,400 gallons; Alsace-Lorraine alone contains 75,640 acres, the production of which in 1890 was 16,999,000 gallons (6,429,740 gallons in 1891), a production which is chiefly consumed in the country itself. According to the same authority the average annual production of wine in the whole world during the five years from 1886 to 1890 is estimated at 2,811,600,000 gallons. In this production Italy figures for 690,008,000 gallons, Spain for 657,250,000 gallons, and France for 606,562,000 gallons; that is to say, these three countries supply two-thirds of the total quantity produced. Germany, with an average annual production of 51,705,610 gallons, only occupies the tenth place among wine-growing countries. The value of some of her wines partly compensates her, however, for the relatively small quantity of her annual crop.





## HARDY FRUIT GARDEN.

**Summer Mulching Fruit Trees.**—The advantages of a manurial mulch on the surface of the soil round fruit trees and bushes are very apparent during hot dry weather. The rapidity of evaporation which takes place from surface soil soon exhausts the available moisture within reach of the upper roots. The result of this is that the finer and most important feeding fibres suffer considerably. Roots dislike to ramify in dry soil, and those so situated will, when the surroundings are not moist, attempt to find the moisture they need by descending to lower levels. Thus, the absence of a summer mulch encourages deep rooting, and causes strong unfruitful growth to be made in trees.

**When to Mulch.**—The best general time for applying mulching material is during May, after the ground has received benefit from the warm spring sunshine, raising the temperature of the soil for several inches below the surface. It should be applied before long-continued drought has deprived the soil of the needful moisture which is necessary to maintain healthy root action near the surface. If the soil appears too dry, the area occupied with roots ought to be thoroughly moistened, either with clear water, or if the trees are old and fruitful with liquid manure prior to spreading the mulch. The manure being sweet and of a lumpy character may be applied about 2 inches thick, spreading it in a circle round the bole, so as to cover the distant rootlets.

**Renewing Mulch to Newly-planted Trees.**—With young trees planted in autumn or early spring the mulching material then applied consisting chiefly of open, strawy material will to a great extent be dried and exhausted. The loose material may, therefore, be raked off and a little fresh substituted. Should the soil be at all dry water may be needed, and it will be best to apply it before renewing the mulch over the roots. This will ensure a moist condition of the soil for a considerable time. Apply the mulching a little beyond the points to which the roots extend, taking care that the manure used is not heavy and solid, but of a light, partly decayed character. The object with young trees is not to feed the roots but to conserve the moisture about them, at the same time admitting air and warmth to the soil.

**Mulching Stone Fruits.**—The treatment of stone fruit trees as regards the roots needs special attention, as the application of an excess of manure is very likely to produce strong gross growth and favour gumming. In applying a mulch to these, then, neutralise rich manure with loamy soil of a calcareous nature. If not possessing the last characteristic add old mortar rubbish well pulverised, or lime in some other available form. Introduce such material direct to the roots, carefully removing the soil until they are reached. See that the soil below is moist. After placing on the roots a couple of inches of compost return on the top a layer of the old soil. Weakly trees that require the growth accelerating may receive a mulching composed of manure only, or at least with less soil added. Heavily cropped trees also require extra support in order to swell the fruit, and to such a mulching of manure will be of great assistance in finishing the crop.

**Mulching Strawberries.**—It is quite time now that all beds and borders of Strawberries which have not already been attended to should be mulched with good manure. Manure containing an equal quantity of both long and short material may be used. The latter will feed the plants as well as conserve the moisture about them in hot dry weather. The former is useful for providing a clean base for the fruit to rest on when ripe.

**Watering Strawberries.**—In most soils this spring, but especially in that which is light and dry, watering will be beneficial. Liquid manure, however, in most cases will be preferable, affording a thorough soaking before mulching, or it can be done with advantage after. New plantations will need moisture in order to aid the plants to obtain good foothold before the hottest weather arrives. If manure is not laid between the rows as a mulch, keep the surface open with the hoe.

**Thinning Apricots, Peaches, and Nectarines.**—Much fruit, especially of Apricots, has received a preliminary thinning, the weather having favoured a good set, and quickly brought on the young fruit to the size of horse beans when the first removals are effected. Thinning the fruit, like disbudding the shoots, should be performed gradually, carefully eschewing all the worst-placed first and those which are behindhand in swelling. More fruit may be left on a vigorous tree than on a weakly one. The same applies to the number left on the branches. Over-vigorous parts may be considerably checked by allowing an extra quantity of fruit to remain. Weaker parts, on the other hand, may be proportionately invigorated by early reducing the number of fruits. In thinning, also take the size of the fruit into consideration. That which naturally develops to a large size thin to wider distances. Properly fertilised fruit swells the soonest; therefore retain these to the last, or until it is seen that some may be dispensed with to the advantage of the trees, and the whole can be considered safe from adverse climatic influences. The stoning period is a critical time. If any injury has been received when in a young state the fruit will drop at this time, if not before. Leave the final thinning until this important period is

past, taking care not to overburden trees with too many in order to see which will pass through the ordeal the best.

**Watering Fruit Trees.**—Newly planted trees will need sufficient moisture to maintain a healthy growth. Let the water used stand, if possible, exposed to the sun and weather for a day or two, or obtain it direct from a soft-water tank. It is always best to apply slightly aired and softened water in preference to that which is cold and hard.

**Destroying Gooseberry Caterpillars.**—When first attacked and the pests are not numerous, hand-picking is effectual to rid the trees. During the early stages dusting with hellebore powder will destroy numbers. Lime also, newly slaked and in fine powder, dredged on the under side of the leaves when damp, acts both as a destroyer of the larvæ and a deterrent to further deposits of eggs upon the foliage.

## FRUIT FORCING.

**Peaches and Nectarines.**—*Early Houses.*—Alexander or Waterloo Peaches started at the beginning of last December now have the fruit ripe, and the foliage must be kept dry until the whole of the fruit is cleared. The wood that has borne fruit and not being required for extension should then be cut out to the successional bearing shoot at the base of each, and the foliage afterwards be thoroughly washed by means of the syringe or garden engine, so as to cleanse the trees of red spider and dust. This will need to be attended to daily in bright weather to preserve the foliage in health. The soil must also be kept in a moist condition, air being freely admitted, but a very low night temperature is not advisable at present, nor too close restriction of the laterals, as upon the health and preservation of the foliage mainly depends the retention of the fruit buds during the rest period. Early Louise Peach and Advance Nectarine started at the same time are now ripening their medium-sized well-flavoured fruits. Water, of course, should be withheld from the fruit, but the trees must not be neglected for water at the roots, and moisture in the atmosphere is absolutely essential to the health of the foliage. Damp the floor and border in the morning and afternoon of fine days, and at other times when these surfaces become dry. Hale's Early Peach and Lord Napier Nectarine in the same house are advanced towards ripening and require similar treatment.

Royal George Peach and Elrue Nectarine, however, under the same conditions are swelling and colouring the fruit, and require a free circulation of air in order to secure flavour, but it should be given carefully during the prevalence of cutting winds, placing some netting over the ventilators. Elevate the fruit well above the foliage by placing pieces of lath on the trellis for them to rest upon. Guard against crowding or shading with more young wood than is necessary for next year's supply of fruit and the extension or furnishing of the trees. Finish stopping and tying the shoots. Continue syringing until the fruit commences to ripen, employing water that will not leave a stain upon the fruits. Inside borders should be well watered, also outside borders, this being necessary on account of the deficiency in the rainfall. A little spent manure placed on inside borders will keep the soil more evenly and longer moist, and by damping the mulching when it becomes dry, surface roots will be encouraged and the moisture evaporated favour the health of the foliage. In reducing the material on outside borders enough should be left to protect the roots and act as a light mulch.

**Succession Houses.**—Attend to the usual routine operations, and keep the trees healthy and vigorous by the timely application of water to the roots and foliage. Early and free ventilation is necessary to secure the solidification of the growth. Weakly trees, and those carrying heavy crops, should be assisted with liquid manure, mulching the borders with a little partially decayed lumpy manure. Allow a free growth of wood through the stoning process, but guard against retaining more shoots than can be tied to the trellis. If red spider appear apply an insecticide, and afterwards syringe forcibly. Brown scale usually attacks the young wood first, and if care is taken to remove it with an insecticide and a brush it may be kept from spreading to the foliage.

**Figs.**—*Earliest Forced Trees in Pots.*—When the very early varieties—Early Violet, St. John's, and Angélique—are cleared off their first crop, the trees should be well syringed, the top-dressing renewed, and copious supplies of liquid manure given to induce the second crop fruit to swell freely. If the fruit is very abundant it should be thinned, leaving a moderate crop only of the best fruits at the base of the growths, for it is necessary to secure a full first crop next season that the points of the shoots be well ripened, and not burdened with fruit in the current year. The watering at the roots will still require to be moderate for White Marseilles and Brown Turkey, now affording ripe fruit; but still afford the supplies needed to keep the foliage in good health, and damp available surfaces occasionally to prevent too arid a condition of the atmosphere. For the colouring and ripening process a free circulation of warm air is necessary, leaving the top ventilators open a little at night. This is essential to the fruit attaining perfection—high colour and quality. When the first crop of fruit is gathered commence syringing the trees twice a day, also watering copiously at the roots with weak guano or other form of liquid manure, with top-dressings of lumpy material, so as to encourage active feeders, and enable the trees to make a more vigorous second growth. If the fruit in the second crop show very abundantly they must be thinned, as before advised, so as not to overburden the trees, to the prejudice of next season's bearing.

**Planted Out Forced Trees.**—The trees in the house started at the new year are now giving indications of the first crop of Figs ripening and from that until the crop is perfected a little ventilation should be allowed constantly at the top of the house, and when the weather is



favourable a free circulation of warm, rather dry air must be afforded. Syringing must cease directly or slightly in advance of the fruit commencing to ripen, and, though moderate air moisture is essential to the health of the foliage, a superabundance of moisture about the house should be avoided. Let the fruit be perfectly ripe before gathering for home use; if it has to be packed it should be gathered a few days earlier, but never before it is nearly quite ripe at the base of the fruit. A good watering should be given when indications of ripening appear, which more particularly applies to trees with only limited space for the roots.

**Succession Houses.**—Attend to stopping the young shoots at the fifth or sixth leaf, but avoid overcrowding the growths, for the fruitfulness of Fig trees depends greatly on the exposure of the foliage and wood to plenty of light and air, and too close pinching and a superfluity of spurs is not desirable, as the finest fruit is borne on extensions. The successional growths also should be kept rather thin, allowing those only to remain that will be required to supplant the branches annually; cut out and maintain a proper successional supply of bearing parts. It is no use, however, striving to render gross trees fruitful by stopping and thinning, for nothing will do that but judicious root-pruning and limiting the rooting area, rendering it firm, so that the trees live thriftily. Attend to syringing the trees twice daily, and water abundantly at the roots as often as required; employ weak tepid liquid manure, especially where the borders are small, and add to the mulching so as to keep about an inch thickness of lumpy material on the border, into which the roots will spread, and they can then be fed to any extent.

**Cherry House.**—Early Rivers, Belle d'Orleans, Black Tartarian, and Governor Wood afford a supply of welcome and delicious fruit for some weeks. The fruit must be kept dry from the first indications of ripening, but the house should have atmospheric moisture furnished by damping the surface of the borders and paths occasionally. Admit air constantly, or condensation will take place, and moisture being deposited on the fruit, it will be ruined by cracking, and instead of having an agreeable be given an unpleasant flavour. The trees must not suffer from dryness at the roots, but the soil be kept in a moist condition, an examination being made periodically; and whenever a supply is needed, afford it thoroughly without delay. Tie in the shoots as they advance in growth, leaving no more than are necessary for furnishing the trellis regularly, allowing sufficient space for the spurs, and stop those not required for training in at about the fifth leaf, pinching subsequent growths to one leaf. Ventilate freely on all favourable occasions, and when the external conditions are unfavourable recourse must be had to the heating apparatus to ensure a circulation of warm, moderately dry air. Netting will be necessary over the ventilators to prevent the birds attacking the Cherries. Black aphides must be kept under by dipping the shoots or leaves in tobacco water.

**Strawberries in Pots.**—John Ruskin proves as prone to attacks of mildew as the Black Prince, and in many places this is a serious drawback to their cultivation. La Grosse Suerée, therefore, still holds first place as the best first early forced Strawberry, and to succeed it none equal Auguste Nicaise, which is not only great in size, finely shapen, bright in colour, and a certain and great cropper, but the fruit is of excellent quality. Arrangements should be made to secure a succession of fruit, which is a matter of difficulty where forcing has to be carried on in vineries and Peach houses, for red spider is soon transmitted to the Vines or Peach trees from the Strawberry plants, which must be kept clean by regular syringing and due supplies of nourishment at the roots. Crops that are ripening may be retarded in various ways for several days in case an extra supply of fruit is required for particular occasions. Turning the fruits from the sun, shifting the plants to a north house, or removing them from under glass into an airy fruit room or other cool place after the fruits are fully ripe, are some of the expedients had recourse to. Much can be done to relieve fruit houses of Strawberry plants by accommodating as many as there are room for in cold pits or frames, where they will finish off well with judicious management, not forgetting to use protection over the lights on cold nights. All that were placed in cold pits some time ago for a late successional supply of fruit should have the flower spikes thinned out to the requisite number, keeping the plants well supplied with water, leaving room between them for a free circulation of air, and the foliage must be kept clear of the glass. Liquid manure should be given at every alternate watering to plants swelling their crops, taking care not to give it too strong, as that destroys the roots, and when cold it chills them, and causes the fruit to swell irregularly.

#### THE FLOWER GARDEN.

**Beds of Spring Flowers.**—A long spell of exceptionally hot and dry weather has greatly shortened the duration of the spring flowers generally, and it is not many of them that will interfere with the preparation of the beds for their summer occupants. In many cases the removal of the former may well be commenced at once, and this, though unsatisfactory in some respects, is not so in others. Usually the spring flowering plants that are reserved for propagating purposes or for future use are neglected during the month of June, but this year they ought to be taken in hand before summer bedding out commences. Some of the hardy plants are also very suitable for summer use, and these should be transplanted where this is necessary as early in May as possible.

**Ajuga reptans rubra.**—This is scarcely showy enough for the beds in summer, but is of good service during the winter. Nothing is more easily propagated. All that is necessary is to pull the old plants

to pieces, every little division with a few roots attached being dibbled in rather thickly in a cool moist position, and given water occasionally if the weather is dry till well established.

**Alyssum saxatile and Iberises.**—These are most showy spring flowering perennials and require almost identical treatment. The same plants if taken good care of are available for several seasons in succession, but it is always advisable to propagate a considerable number every summer, as they are rather slow in attaining a serviceable size. Much may be done in the way of splitting the old plants, every piece with a few roots attached being planted somewhat closely in rows 10 inches apart on a cool border. All old flowers and any fresh ones that form should be kept closely gathered from them, and without much further trouble a lot of strong spreading plants should be the result. Short rootless pieces or cuttings can be either dibbled out rather thickly and firmly at the foot of a north wall, though if enclosed by handlights and given the benefit of sandy soil they will strike more surely and quickly. They must not be allowed to suffer from want of water, and if not close up to a wall should be carefully shaded from bright sunshine.

**Arabises and Aubrietias.**—The variegated forms of the former if prevented flowering are very pretty, and quite good enough for summer bedding, as well as the winter decoration of beds. If there is no necessity to disturb them so much the better, but large old plants may well be lifted, divided freely, and replanted as an edging. Should the soil be at all dry, and very heavy rains will be needed to remoisten them, well water prior to replanting the Arabises, and again after they are planted, also shading them from fierce sunshine for a few days, branches of trees or evergreens answering well for the purpose. The ordinary flowering varieties of both Arabises and Aubrietias can be pulled to pieces freely and replanted somewhat thickly on good ground, taking care to well bury and fix the stems. This will be found a better plan than dividing the old plants when they are transferred to the beds in the autumn.

**Daisies.**—Already these plants have suffered badly from the heat and drought, and unless attended to soon many plants may be lost. The variegated form will be found a very effective edging plant for beds or borders in cool moist positions. Those growing solely for their flowers can be pulled to pieces and replanted somewhat closely in lines 6 inches or rather more apart, a cool position, such as the spaces among fruit trees and bushes, best suiting them. See that they do not become dry at the roots before they have time to take possession of their fresh quarters.

**Cerastium and Stachys lanata.**—These silvery foliaged plants are of good service during the summer as well as the winter, the former forming a neat edging for small beds, and the latter being most effective in a broad band surrounding large beds, or it may form the groundwork for groups in circles of Zonal Pelargoniums, Heliotropes and such like. The Cerastium may be pulled to pieces and replanted closely and deeply, much as Box edging is put out, and be kept trimmed into shape, while the Stachys can be very freely divided and replanted just clear of each other. Water the ground freely both before and after planting unless sufficient rains have fallen to well moisten the soil.

**Wallflowers.**—Hot sunshine quickly spoils these. Large old plants of the commoner forms, or such as can be readily raised from seed, are not worth keeping; but late-raised stocky plants if replanted among shrubs and other somewhat similar quarters and not again disturbed, would give a display of early bloom next spring. Now is the best time to sow seed. If the sowing is deferred later than May the chances are the plants obtained will be too small to be of any real service. Open shallow drills 6 inches apart on a well prepared border, water these gently, sow the seed somewhat thinly, and level over. Nothing but a long-continued drought ought to necessitate watering of these seed beds. If only a few dozen plants are required sow the seed in pans or boxes, and set these in a cool place. Double flowering varieties, other than the tall German strains, and which latter are raised from seed with the ordinary forms, are propagated by means of short cuttings taken or pulled off with a heel, and either dibbled in handlights set in a cool place, or else at the foot of a north wall or fence. Given the assistance of good light sandy soil, the cuttings being firmly fixed in this, and they will root more surely, and also transplant more readily than they will out of poor hard soil.

**Dactylis and Festuca.**—Dactylis glomerata variegata and Festuca glauca are effective for the beds either during the winter or summer, and ought to be very extensively grown where much bedding out has to be done. Both are suitable for edgings, the first named being the neatest in growth. If it is intended to increase the stock or to change the position this should be done soon. They will bear being pulled to pieces severely, but the divisions ought to be firmly and rather deeply replanted in fairly good moisture-holding soil, and watered occasionally till well established.

**Miscellaneous.**—Hepaticas transplant readily enough, and may also be freely divided at the present time. They succeed best in peaty soil and cool positions. Hellebores may also be removed from the flower beds, split if large, and be replanted among fruit trees or in other moderately cool positions. The Gentianellas do not move well, and thrive best where not exposed to fierce sunshine and are planted in strong soil. Now is the time to propagate by division. Saxifragas can be lifted, divided and replanted much as advised in the case of Daisies, and if sufficient seedling Primulas, Primroses, and Polyanthus are not already raised, the stock can be increased and improved by dividing and replanting on cool borders. All bulbous rooted plants that must of



necessity be moved from the beds to be relaid in moist garden soil till the foliage has ripened, when they may be again lifted and stored in boxes of sand. Many of the Conifers and evergreens when lifted will be found very dry at the roots. Soak the balls in tubs or tanks of water prior to re-planting.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### EXCESSIVE HONEY GATHERING.

THIS sometimes acts in a detrimental manner early in the year, causing hives to be unprofitable. Strong hives will have their combs well filled with brood and food for the young, and meanwhile the surplus honey can be stored in supers or extra divisions. This cannot be done with weak colonies, as all the bees are required to attend to the internal economy of the brood nest, and to the filling and sealing of the rest of the combs with honey necessary for breeding purposes. This prevents the extension of the brood chamber, almost putting an entire stop to the queen depositing eggs, consequently both queen and bees become crowded out, and the hive becomes unprofitable.

Between the extremes of having too little or too much honey the bee-keeper must act judiciously, as the one is as great a fault as the other when the remedy is neglected. In the one case the bees must be fed; in the other, honey-gorged combs should be removed, and full sheets of foundation supplied. With storifying hives, supplying an extra storey is an effective and simple remedy; but in no case should it be given without foundation, or drone combs will be built.

#### DRONE COMB.

Prime swarms, especially those having effete queens, are very liable to make a superabundance of drone comb, which also militates against profit. This should be watched and guarded against. The best remedy is to utilise nuclei with a youthful and fertile queen, which the clever bee-keeper will be sure to have in plenty early in the season to supersede aged queens. Queens are at their best when they at first begin laying, when there are sufficient bees to care for the eggs and larvæ, and they continue to be good for ten months or so after. Queens just a little before becoming useless show a remarkable degree of fecundity for a brief period. I do not argue that two-year-old queens are unprofitable, but place a number of queens in their first year and the same number of two and three-year-old ones side by side in equal condition, they will at an early time in the spring make it obvious to the merest tyro that the youthful queens are not only the most advanced, but that they are free from casualties that more aged queens are subject to, to the loss and dismay of the bee-keeper.

#### BEES AND THE WEATHER.

All the bee-keeper's hopes hang on fine weather, with a profusion of flowers, sunshine, and heat, with that amount of moisture that makes the earth fruitful and the atmosphere salubrious. At this period when bees are well supplied with stores and the weather is rather cold they remain within doors, there is no loss of bees, consequently the hives become quickly crowded with young ones, and the bees are all in the best of condition at the proper time to gather honey from the profusion of flowers. It is seldom that the honey season from any particular flower lasts longer than two weeks, and this is the reason that the largest yields of honey have been in seasons when the fine snaps of weather were fine but brief, and always after copious soft rains with heat. Heather blossom suffers greatly from excessive rainfalls. It is the evaporated moisture from the hills that sustains Heather, and makes it so rich in honey.

These remarks may appear to some to be superfluous, but the fact is many people are unaware that a long continuance of sunshine is inimical to the secretion of honey, far more so than a similar period of dull weather previous to the opening of the honeyed flowers. Beginners should study these things, and be able to understand bees and bee-keeping. When these items are understood and mastered bee-keeping becomes an easy matter and perplexity disappears.—A LANARKSHIRE BEE-KEEPER.

#### EARLY SWARMS OF BEES.

With reference to this subject on page 346 it may interest bee-keepers to know that Mr. Gibbon, Seaford Grange, Pershore, had a swarm on the 20th April. I heard of several others in the locality about the same time, but did not obtain the exact dates. Reference is made in the "Worcester Journal" of April 22nd, to many early swarms in various districts. I can only call to mind one swarm in April before, and that would be forty years ago.—J. HIAM.



••All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Tea Tree (W. D. H.).**—This is *Lycium europæum*, and belongs to the natural order of Nightshades (*Solanaceæ*), and to the Linnæan order of Pentandria.

**Fungi in Mushroom Beds (T. R.).**—Your specimens arrived too late to have a thorough examination to enable us to give a full reply in this week's issue, but the matter shall be dealt with in an early number.

**Tomatoes Diseased (A. K. & Sons).**—The fruit sent is attacked by the destructive disease *Cladosporium lycopersici*, which causes the decay of the Tomatoes. An illustration and description of the fungus, also a method of eradication, were published in the *Journal of Horticulture* for May 19th, 1892, to which you may refer with advantage.

**Beeches Dying (H. F. C.).**—If the trees are not too far gone, a top-dressing of 9 inches of good soil would probably arrest decay, induce fresh growth, and in time render them healthy flourishing trees again. This is all that can be said without actual inspection. A practical man after examining the trees might be able to give useful advice.

**Vine Leaves Perforated (W. H.).**—The large, thick-textured, leathery Vine leaf has been eaten or perforated in its younger state by some insect, the appearance being that produced by the larva of the Apricot Moth (*Tortrix angustiorana*), which is also sometimes called the Vine Moth, as it occasionally finds its way into vineries and deposits its eggs on Vines, generally when they are starting into growth or later in the points of the shoots or bunches, where it spins a web and lives on the berries. There is nothing on the leaf and the damage is not recent, as the edges of the wound or perforation are healed over. It is hardly necessary to say—keep a keen eye on the Vines, especially the bunches.

**White Worms in Manure (G. W. C. R.).**—The "white worms" belong to the same order (*Oligochaeta*) as the earthworm—that is, they are true worms (*Annelida*). The eelworms belong to *Nematelmia*, and are not included in the *Annelida*, but with tapeworms in the *Scolecida*. "White worms" are often very abundant in partially decayed manure, especially that containing much vegetable matter, such as leaves, grass, vegetable refuse, hay, and straw, undergoing decomposition, and in soddened, sour soils. They chiefly subsist on dead or decaying vegetable matter, but they are supposed to injure the roots of plants by sucking the root-hairs, and in that way produce an unhealthy growth in the plants. Clover sickness, disease in Cucumbers, Tomatoes, and Vegetable Marrows have been attributed to "white worms" without sufficient reason; our observations tend to prove them mere scavengers, and not subsistent on living tissues, or only on those unhealthy and undergoing incipient decomposition. They soon die in drought, and quicklime destroys them.

**Basketing Orchids (A. L. M.).**—The following note, written by one who is an expert in the culture of Orchids, will answer your question:—The chief reason for using baskets for many Orchids is to provide those plants which have roots inclined to ramify beyond the limits of a pot, or are in need of more light and air and moisture, with a suitable medium for keeping them in a healthy state, besides affording the roots appropriate material to cling to, as well as for those of a pendant growth, such as *Dendrobium Wardianum*, and for suspending from the roof, where their beauty is better seen. There are some Orchids which refuse to grow in a pot or pan, but will thrive in a basket or upon a block. *Cattleya citrina* is one of these; *Cattleya Acklandiæ* and *Sophranitis grandiflora* are much healthier so treated. Other examples might be named, but where there are several plants of a genus it will be safest to start the plants under three different ways—by placing some in pots, others in baskets or on blocks. Experience will in time tell which presents the most suitable condition for their health. The operation of basketing imported plants is not more difficult than that of potting, because being already disentangled, and more or less injured in consequence, the object is to put the plants in the right way for recovery; therefore use reasonably small baskets, and fix the plants high in the centre of it, using two-thirds sphagnum to one of peat, placed carefully and rather firm round its base, adding



pieces of charcoal rather freely for large baskets, but in the case of small plants and small baskets little else besides charcoal and sphagnum will be necessary to give them a start. Such plants as Vandas, Saccoboliums, and Aërides require rather shallow baskets, Stanhopeas especially so, as they have a habit of sending their flower stems through the bottom and sides of the basket.

**Insects on Camellia Leaf** (*Somerset.*)—The cottony substance over the cylindrical patch or on the under side of the leaf acts as a covering to a number of small insects, which you may discover with an ordinary pocket lens to be brownish, and to have the shape of small scale, which they really are, and will soon spread over the plant. The insects, however, seldom become very numerous, as they are preyed on by other minute insects belonging to Hymenoptera, which are parasitic in the Camellia scale (*Aspidiotus* or *Dactylopius Camelliae*), but it should be extirpated by sponging the leaves without delay and so as to remove the cottony matter with a solution of softsoap, 4 ozs. to a gallon of water, to which a teaspoonful of petroleum may be added. The best way to prepare the mixture is to dissolve the softsoap in hot water, place in a 2 gallon stone bottle, add the petroleum, cork, and shake the bottle up and down, or to and fro for five minutes, pour about a pint into a vessel for use with a sponge, not using it at a temperature exceeding 100°, and so proceed. It is important that the petroleum be well mixed with the soapy solution.

**Zoospores** (*A. B.*)—The statement of a correspondent that the zoospores and fungi float in the air is probably incorrect, Griffiths notwithstanding. De Bary says:—"The spores of many Phycomycetes have the characteristics of autonomous motile cells, and are therefore named swarm spores, or zoospores, as having motion like animals. They are always formed endogenously by simultaneous division, and are liberated from the sporangium by a process of swelling. Their origin and their development, at least up to the period of germination, take place only under water; the species which produce them are inhabitants of the water, or at least their sporangia find their way into water for the purpose of forming the spores. . . . These movements commence in some species (*Saprolegnia*, *Pythium*, the *Chytrideæ*) inside the sporangium shortly before the liberation of the spores, and the cilia are by that time already formed; in other cases, as *Achylya* and *Cystopus*, the cilia and the movements make their appearance after the spores have entered the water. The motion under favourable circumstances only lasts a short time in the swarm spores of the fungi, sometimes only one or a few minutes."

**Gymnogramma chrysophylla Culture** (*A. S.*)—Your plant does not grow because the temperature has been too low. It requires a night temperature of not less than 55° in winter, and a moist atmosphere without the foliage being wetted. The plant is probably old; such plants never do so well as those which, from being very small, are liberally treated until they become specimens, after which they gradually decline. If you have now a small plant in, say, a 4½-inch pot, we should put it at once into an 8-inch pot, draining the pot to one-fourth its depth, and using a compost of sweet leaf mould one-half, turfy yellow loam one-half, and fibrous brown peat one-fourth, adding one-sixth of silver sand, the whole well mixed and broken with a spade, but not sifted. Pot rather deeply, but not so much as to cover the crown. The plant should be set in the lightest part of the house, have room on all sides, and be not more than 18 inches from the glass. The soil should be kept moist, but not wet, until the roots are working freely, and the temperature may range from 60° to 65° by night. By day it may be 70° without sun, and from 80° to 85° with it, shade being afforded from 9 A.M. to 4 P.M., when the sky is clear, but when cloudy do not shade at all. No shade will be needed from September to April. The plant must always have the soil moist, but no water should be given until it is really needed, then afford a supply sufficient to show itself through the bottom of the pot. If your plant grow as well as we expect, it will need a shift by the end of July, or at latest by the third week in August, so that the pot may be filled with roots before winter, as it will be in six weeks after potting if a 10-inch pot be given. From that time no more water should be given than is sufficient to prevent the soil becoming dry, and if a sufficiently moist atmosphere be maintained it will winter safely in a temperature of 60° at night, and occasionally as low as 55° or even 50°, but this degree must be seldom reached.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*G. P.*)—*Cerasus Padus*, the Bird Cherry, a native tree and plentiful in some districts. It is often called *Prunus Padus*, ornamental when flowering and is fragrant. (*J. B.*)—1, *Begonia metallica*; 2, *Alonsoa Warscewiczii*; 3, *Begonia ascotiensis*. (*J. J.*)—*Doronicum plantagineum excelsum*. (*L. B.*)—*Odontoglossum citrosum*. (*W. D. H.*)—*Lycium europæum*.

#### TRADE CATALOGUES RECEIVED.

Oscar Tieffenthal, Wandsbek, Hamburg, Germany.—*German Plants and Roots.*

Thomas Painter, Smallwood, Stoke-on-Trent.—*Dahlias.*

#### COVENT GARDEN MARKET.—MAY 3RD.

Market heavily supplied with all classes of goods. A steady trade doing at lower prices.

##### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.		
Apples, half sieve .. ..	1	0	to	3	6	Lemons, case .. ..	10	0	to 15	0	
„ Tasmanian, per case ..	6	0		12	0	Oranges, per 100 .. ..	4	0		9	0
„ Nova Scotia, per ..						St. Michael Pines, each ..	2	0		5	0
barrel .. ..	12	0		17	0	Strawberries, per lb. ..	1	6		4	6
Grapes per lb. .. ..	2	0		4	0						

##### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Asparagus, per bundle ..	1	6	to	4	0	Mustard and Cress, punnet	0	2	to	0	0
Beans, Kidney, per lb. ..	0	6		1	0	Onions, bunch .. ..	0	3		0	5
Beet, Red, dozen .. ..	1	0		0	0	Parsley, dozen bunches ..	2	0		3	0
Carrots, bunch .. ..	0	4		0	0	Parsnips, dozen .. ..	1	0		0	0
Cauliflowers, dozen .. ..	2	0		3	0	Potatoes, per cwt. .. ..	2	0		5	0
Celery, bundle .. ..	1	0		1	3	Salsify, bundle .. ..	1	0		1	6
Coleworts, dozen bunches ..	2	0		4	0	Scorzouera, buundle .. ..	1	6		0	0
Cucumbers, dozen .. ..	2	6		4	0	Seakale, per basket .. ..	1	3		1	6
Endive, dozen .. ..	1	3		1	6	Shallots, per lb. .. ..	0	3		0	0
Herbs, bunch .. ..	0	3		0	0	Spinach, bushel .. ..	3	0		3	6
Leeks, bunch .. ..	0	2		0	0	Tomatoes, per lb. .. ..	0	6		1	6
Lettuce, dozen .. ..	0	9		1	0	Turnips, bunch .. ..	0	3		0	4
Mushrooms, punnet .. ..	0	9		1	0						

#### AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	to	3	0	Myosotis, dozen bunches ..	1	6	to 3 0
Azalea, dozen sprays ..	0	6	0	9	Narciss, var., French, dozen				
Bluebells, dozen bunches ..	0	6	1	0	bunches .. ..	1	0	4	0
Bouvardias, bunch ..	0	6	1	0	Orchids, per dozen blooms	3	0	12	6
Camellias, doz. blooms ..	1	0	2	0	Pelargoniums, 12 bunches	6	0	9	0
Carnations, 12 blooms ..	1	0	3	0	Pelargoniums, scarlet, doz.				
Cowslips, dozen bunches ..	1	0	2	0	bunches .. ..	4	0	6	0
Daffodils, dozen bunches ..	2	0	6	0	Polyanthus, dozen bunches	2	0	3	0
Eucharis, dozen .. ..	3	0	4	0	Primroses, dozen bunches	0	6	1	0
Gardenias, per dozen ..	1	0	2	0	Primula (double) 12 sprays	0	9	1	0
Lilac, white, French, per					Roses (French), per doz. ..	0	6	2	0
bunch .. ..	3	0	5	0	„ (indoor), dozen .. ..	0	9	2	0
Lilium candidum, dozen					„ Red, per doz. blooms..	1	6	3	0
blooms .. ..	0	6	1	0	„ Tea, white, dozen ..	1	0	2	0
Lilium longiflorum 12					„ Yellow, dozen .. ..	2	0	4	0
blooms .. ..	2	0	3	0	Spiraea, dozen bunches ..	3	0	6	0
Lily of the Valley, dozen					Tuberose, 12 blooms..	0	9	1	0
bunches .. ..	3	0	6	0	Tulips, dozen blooms ..	0	4	0	6
Lily of the Valley, dozen					Violets, Parme, French, per				
sprays .. ..	0	6	1	6	bunch .. ..	2	0	4	0
Maidenhair Fern, dozen					Violets (English), dozen				
bunches .. ..	6	0	9	0	bunches .. ..	1	0	1	6
Marguerites, 12 bunches ..	2	0	4	0	Wallflowers, doz. bunches	2	0	4	0
Mignonette, 12 bunches ..	3	0	6	0					

##### PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Ferns (small), per hundred	6	0	to 8	0	
Arum Lilies, per dozen ..	8	0		12	0	Ficus elastica, each .. ..	1	6		7	6
Aspidistra, per dozen ..	18	0		36	0	Foliage plants, var., each..	2	0		10	0
Aspidistra, specimen plant	5	0		10	6	Genista, per dozen .. ..	6	0		12	0
Azalea, per dozen .. ..	24	0		42	0	Lilium Harrissi, per dozen	18	0		30	0
Cineraria, per dozen .. ..	6	0		9	0	Lily of the Valley, doz. pots	12	0		18	0
Cupressus, large plants, each	2	0		5	0	Lycopodiums, per dozen ..	3	0		4	0
Cyclamen, dozen pots ..	9	0		18	6	Marguerite Daisy, dozen ..	6	0		12	0
Deutzia, per dozen .. ..	6	0		8	0	Myrtles, dozen .. ..	6	0		9	0
Dracæna terminalis, dozen	18	0		42	0	Palms, in var., each .. ..	1	0		15	0
„ viridis, dozen .. ..	9	0		24	0	„ (specimens) .. ..	21	0		63	0
Dielytra, per dozen .. ..	6	0		9	0	Pelargoniums, per dozen ..	9	0		18	0
Euonymus, var., dozen ..	6	0		18	0	„ scarlet, per dozen ..	4	0		6	0
Evergreens, in var., dozen	6	0		24	0	Primula, single, doz. pots	4	0		0	0
Ferns, in variety, dozen ..	4	0		18	0	Spiræa, per dozen .. ..	6	0		12	0

Bedding plants in variety.



#### FRUIT AND VEGETABLE FARMING.

MENTION is frequently made of more and more land being devoted to the cultivation of fruit and vegetables as a sign of progressive improvement, and it undoubtedly is so. But this extension of fruit and vegetable farming has a significance of far greater importance than the mere fact of planting so many more acres with such crops; it is part and parcel of a commercial revolution, which is swiftly bringing within the means of all classes of the community an abundant winter supply of the choicest fruits and vegetables of summer, either by means of evaporation, under which the water is simply driven out and all nutritive properties retained, or by canning or bottling, which involves some boiling and a total exclusion of air. Clearly this points to a profitable extension of this branch of farming on a very large scale, and the establishment of factories either at the farms or at convenient centres for obtaining an abundant home-grown supply. It is a matter of the utmost importance to farmers, which, if rightly turned to account, will enable them once more to make the land teem with plenty.



Judging from bottled fruit and vegetables now on sale this branch of the work is well understood, flavour, colour, and freshness being alike of remarkable excellence. Careful corking, sealing with melted resin, and the use of a thin metallic capsule, is the general method for air-exclusion. Some of the most delicious bottle Raspberries we have tasted were preserved by a lady in Derbyshire. She boils 3 lbs. of loaf sugar in a quart of water till it is clear; it is let cool, then 12 lbs. of the fruit is added, and the whole boiled together for two or three minutes, then put in warm bottles and tied down with bladder at once. She does Currants and Plums equally well, dividing the Plums and taking out the stones.

In the United States of America this has long been regarded as an important and highly remunerative industry. Here is a description of how they work, as given by Mr. Charles Whitehead:—A canning factory is provided with apparatus and machinery necessary for paring, coring, and stoning fruit. It is furnished with large tanks heated by steam for boiling fruit and vegetables. The process is as follows:—The fruit in the case of Apples, Peaches, and Pears is pared, cored, and washed in troughs in which there is clear water. It is then placed as tightly as possible into the cans. Plums are rapidly stoned by machinery and put closely into the cans. Then the cans are marked with the class of fruit in them, and are arranged in racks holding many dozens, placed upon trucks and carried to a tank of syrup from which each can is filled. At this juncture caps, or metal coverings, are soldered on by means of a clever machine which works most rapidly. A tiny hole is left in the centre of each cap. The truck with the cans is moved forward to a tank containing boiling water, in which the racks of cans lifted from the trucks are placed and kept, for spaces of time varying with the kind of fruit. It should be mentioned here that the hole left in the cap is so small that no water gets in and no syrup comes out. After the boiling the racks of cans are replaced on the truck and passed on to a station where the holes in the caps are stopped with solder. Again the cans are put into boiling water for a few minutes to destroy any germs within that might cause fermentation. They are then labelled and packed for delivery.

Syrup is added just in sufficient quantities to make the fruit pleasant to the taste, and not with any idea of preserving it. To Pears and Apples from 5 to 6 ozs. are given per quart can; to Peaches and Apricots from 3 to 4 ozs. per quart can; Gooseberries, Currants, Blackberries, Cherries, and Plums take from 6 to 7 ozs. per quart can.

With regard to vegetables the same process is adopted, but of course no sugar is added, and the cans are filled two-thirds full of water. The vegetables are prepared as for cooking, and they must be boiled much longer than fruits. Tomatoes are canned most extensively, and retain their fine flavour and agreeable qualities for long periods. Green Peas, French Beans, Asparagus, and young Carrots are peculiarly suited for this process.

As we explained last October, glass jars have very generally taken the place of tin cans in the United States. They vary in capacity from a pint to two quarts, have simply a neck flange, rubber ring, and screw top, which makes them quite airtight. Tin cans are regarded with suspicion from their tendency to render the preserved fruit or vegetables unwholesome by the acids which they contain acting upon the metal. Glass jars do not impart any flavour or taint to their contents if well washed, and are useable again and again. Fruit or vegetables are boiled till done, say ten minutes for any of the soft fruits, upwards to twenty minutes or two or three times as long for Apples and Pears.

#### WORK ON THE HOME FARM.

Lambs are being pushed on by trough feeding whether they are intended for sale in June or as hoggets at from twelve to fifteen months

old. They are compact, thrifty cross-breeds, which answer well under really good management, and are still profitable, but profits with lambs as well as everything else in farming become less every year under the persistent foreign competition, which has and will have to be met as best we can. Unquestionably the best way is to select well, breed well, feed well, and sell well. Breed your own stock, grow your own food, and be your own salesman. It is noteworthy that while sheep and cattle of the ordinary inferior market type fell steadily in price last year, the price of the best quality was well maintained. Much money has undoubtedly been made under the depression by those farmers who breed for quality to keep a large high class stock, to grow what corn was possible, to consume the whole of it, to supplement the home supply when necessary with purchased cheap foreign corn, avoiding cake bills altogether. One of the most prosperous men known to us in farming is a yeoman farmer who has kept most of his home farm in plough because of the demand for and high price of straw in his locality, owing to the fact of most of the farms being entirely in grass. He rears and feeds much good stock, hiring grass land when necessary, and is evidently prosperous because he is a keen man of business as well as a good farmer.

Since the advent of the locomotive steam thrashing machine large barns for corn thrashing have ceased to be a necessity. Many a barn have we turned into most healthy comfortable quarters for cattle. A barn may be made to serve all the purposes of a covered yard, it may do more, for with plenty of air shafts for ventilation a good substantial upper floor answers admirably for storing and cleaning corn. We mention this now the cows and store cattle are going out of yards, and attention is being given to any possibility of improved accommodation for another winter. Let this be seen to as soon as the manure is cleared out, and yards and buildings set in order before the hurry of haymaking and harvest is upon us. Should the weather prove cold and wet in late summer and autumn plenty of shelter may prove of material advantage for the live stock.

#### OUR LETTER BOX.

**Prickly Comfrey** (*H. F. C.*).—After giving this crop a fair trial, we found it practically worthless in comparison with such other fodder crops as Rye, Rye Grass, mixed seeds, Sainfoin, Red and White Clover, Trifolium incarnatum, and Lucerne, so that our culture of it never got beyond a trial. Most or all of the green crops mentioned should answer with you. Do not forget our advice to grow as much Green Maize as your cattle can consume before frost sets in. Sow early in June, and have a sharp outlook kept for rooks, or they will have all the seed.

**Bottling Fruit and Vegetables** (*S. J. A.*).—The glass jars mentioned in our article on this subject on October 27th, 1892, are those in use in the United States of America, where they now have preference to the tin cans long used in that country. They have a rubber ring or flange, and screw top for the exclusion of air. We cannot say where they can be had in this country, but have no doubt a prompt supply will be forthcoming in response to any demand for them from any large dealers in such ware. It is obvious that vegetables preserved in cans or glass jars require more boiling than the softer fruits. Evaporated fruit and vegetables simply have the water driven off, and are preserved in a dry state. Canned or bottled fruit and vegetables are boiled and preserved in a cooked condition. That this process is well understood in this country we are convinced, from the excellent examples of bottle fruits now to be had from provision merchants at a very low price. We have recently had at table excellent Plums, Damsons, Raspberries, and Currants; also what are sold as Yorkshire Marrowfat Peas, which were delicious both in tenderness and flavour. Such vegetables are indeed a boon in winter, and the price (8d. per bottle) appears to us to be reasonable. They should be preserved when in the best condition for current use. This subject is more fully dealt with in our home farm article this week.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.				IN THE DAY.				Rain.	
		Barometer at 32°, and Sea Level.	Hygrometer.		Dirrec- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
			Inchs.	deg.			deg.	deg.	deg.		deg.
1893.											
April.											
Sunday ..	23	30.045	57.7	51.1	N.E.	51.8	74.0	43.7	102.0	37.6	—
Monday ..	24	30.053	59.0	51.7	N.E.	51.9	77.8	43.7	114.1	37.3	—
Tuesday ..	25	30.047	60.0	51.3	N.E.	52.9	76.4	45.4	117.8	38.4	—
Wednesday	26	30.055	58.7	47.4	N.E.	53.6	74.2	44.1	115.9	36.9	—
Thursday ..	27	30.040	47.7	45.0	N.E.	53.9	63.7	42.9	103.9	40.2	—
Friday ..	28	29.976	50.3	46.3	N.E.	53.4	68.2	41.2	106.8	34.2	—
Saturday ..	29	29.958	55.2	48.9	N.W.	53.8	65.3	47.2	93.7	43.7	—
		30.026	55.5	48.8		53.0	71.4	44.0	107.7	38.3	—

#### REMARKS.

23rd.—Almost cloudless throughout.  
 24th.—Almost cloudless throughout.  
 25th.—Bright sunshine all day.  
 26th.—Cloudless till late evening.  
 27th.—Overcast till 10 A.M.; bright sun after 11 A.M.; cloudless afternoon and evening.  
 28th.—Overcast early; bright sunshine from 9 A.M. to 3 P.M., when it clouded over and remained overcast.  
 29th.—Overcast till 8.30 A.M., bright sunshine after, occasional cloud in afternoon, and spots of rain between 9 and 10 P.M.  
 Another warm, dry, and rainless week with very little cloud.—G. J. SYMONS.





"ALL Roads lead to Earl's Court." This is what we read on large posters displayed on buildings in London and surrounding districts. It is true enough if only the right turns are taken, and it is equally true that all the inhabitants of the horticultural world who can do so will find their way to the Gardening and Forestry Exhibition which is indicated in the above geographical expression. The quickest way, no doubt, to persons who find themselves in the city or its confines is the underground railway, and once on the track there is no danger of wrong turnings being taken to Earl's Court Station, which adjoins the Exhibition, while the West Brompton Station is very near it. After learning somewhat of the way to a particular centre, the next thing the public, who are interested, wish to know is of what there is to be seen on arrival. This opens up a gigantic question, for no other term adequately indicates the character of the forthcoming attractions as suggested by the nature of the preparations now advancing to completion. It is not too much to say that plenty will be found to afford instruction and give delight to all who wish to learn something on gardening and forestry, and find recreation of the most wholesome kind amid beautiful surrounding—*plus*, for those who desire the change, scenes in French history and amusements on the one hand, and what may be termed a water carnival on the other, such as has not been previously seen in this country if in any other.

Foremost, however, is the Gardening and Forestry Exhibition. On the preparation of this much thought has been expended and skill displayed. The grounds have been remodelled, the main or central portion presenting a more park-like appearance than last year, while nooks and corners have been utilised in representations of small gardens, and plans carried out that suggest how many a dingy forecourt—and there are far too many attached to the homes of the people—may be rendered pleasing by the exercise of taste, such as is indicated in the appropriate object lessons of Mr. Milner and his coadjutors. These grounds, with their several attractive features, will form a rendezvous for the million, whose lives are mainly spent in office, shop, or factory, and who must, when their duties are over, have "somewhere to go." Where better can they go than into a garden with trees and flowers around them, brilliantly illuminated, and the best of music provided to drive dull care away? As a nation we are said to take our pleasures sadly, and it is sad enough to think of the old methods of crowding in drinkshops and stifling buildings on beautiful summer evenings—a practice not yet obsolete, but happily becoming less popular in proportion as counter attractions of a wholesome nature are provided. The most effectual of these have been the parks and gardens that are established and so well maintained around the metropolis and other populous centres. It is impossible to over-estimate the good that these have done to many in many ways; but when the shades of evening fall the people are not rung to bed by the curfew bell, and instead of lights being put out, night, so to say, can be turned into day as long as is needed by the agency of electricity. This was so last year at Earl's Court, where thousands of persons assembled, and there was a gratifying absence of anything that could offend, but all was orderly, and the multitudes represented the best side of the British community; so it will be again this

year, and as outdoor pleasures are becoming more and more popular it may be expected that still greater numbers will find their way to the illuminated pleasure grounds during the present season.

Though the great bulk of visitors will be in search of enjoyment and recreation, those who need it may also find instruction in gardening and forestry. Exhibitions of plants, flowers, and fruit, as well as of wood and its uses, are always instructive to those who are disposed to read the lessons conveyed; and it is reasonable to suppose, in fact practically certain, that not a few persons who are brought into contact with the work of experts in cultivation and handicrafts have their interest excited, and themselves become students in the hope of becoming practitioners in turn as opportunities occur, or are made, for earnest people make them. The object of the promoters of the Gardening and Forestry Exhibition is to afford pleasure with instruction, and it is because the combination is regarded as good that it is recognised by the highest in the land, and receives the active patronage of members of the Royal family, distinguished ecclesiastics, and leaders in thought and education. They believe that wholesome recreation and intellectual enjoyment are worthy of encouragement, or they would take no lead or part in their promotion.

The Exhibition is as yet in its infancy—necessarily incomplete, but growing. The great covered garden that was somewhat of a tropical mixture last year will at the opening on the 13th inst. present a very different and at the same time a brilliant appearance. Rhododendrons will predominate. The side banks and beds have been planted with compact floriferous shrubs by Messrs. William Paul & Son, Waltham Cross, and H. Lane & Son, Berkhamsted. These with their myriads of trusses in varied colours will make a show in themselves, and will form a background and foil to other plants that will be introduced as the season advances. The central portion of the garden will contain beds of Roses and other flowers, forming altogether a rich floral feast. In the grounds beds and borders are being planted by nurserymen with various shrubs, and walls are being covered with climbers. Messrs. Cheal and Son have planted a miniature orchard, also a garden of fruit trees of varied shapes and forms, with vegetables growing between them. The fruit arch and diamond fruit fences are also represented, but the prolonged dry weather has militated against the satisfactory growth of the trees, and some of them can only recover slowly; and the same may be said of trees generally which have been planted late under unfavourable conditions. There is a toy-like example of forest planting, representative of trees and shrubs appropriate to sandy, chalky, and clayey soils. It may cause passing interest, but is only as was graphically inscribed by an expert, "Forestry on a postage stamp after all."

The exhibition of woods is in the annexe on the left of the entrance, and whether the small beginning will grow to good dimensions time alone can tell. Several specimens have, however, been got together, and doubtless more will follow. One of the famous Burnham Beeches has been brought and planted by Mr. H. Turner, a giant trunk and quaint relic of antiquity 800 years old. Wooden water pipes of ancient London are also on view, tree trunks bored through and have been no doubt buried for centuries. There are also more modern trees, notably examples from Highclere, the Earl of Carnarvon's, namely the butt of a Douglas Fir sixty years old, the cubic contents of the tree 169 feet; *Pinus strobus*, 100 years old, cubic contents 110 feet; *Pinus Laricio*, sixty years, contents 111 feet and *Abies Menziesi*, forty-five years old, cubic contents 80 feet, with planed boards from the same trees. There are also specimens of wood and insects in cases, to which additions will doubtless be made. The original specimen of Cherry grafting that was illustrated in the *Journal of Horticulture*, page 343, April 27th, is on view showing the wood of the scion attached about twenty years ago in process of decay, but the surrounding growth of stock and scion bright



and healthy. Not far from the entrance the grotto and fernery, in course of construction, will form a cool retreat for visitors. Here, too, is a fine scenic representation of Mr. Leopold de Rothschild's beautiful garden at Ascott, the same as depicted in the *Journal of Horticulture*, February 5th, 1891, the colour and distances being admirably rendered.

As auxiliaries of the Exhibition, Old Paris—the Rue St. Antoine and the Bastille, a realistic piece of work, produced at a cost of £16,000, will be sure to prove attractive; and not less so will the wonderful "water show" of Captain Boyton, the preparations for which are of an extraordinary nature; but these are side issues, remarkable though they be. Returning to the pleasure grounds, we had omitted to say that the Eldystone Lighthouse is nearly completed, and visitors will not omit to see it, nor will they the great scenic representations of the wooded hills and vales of Surrey on the one hand, and the Lakes of Killarney on the other.

Such are, in brief, the permanent attractions, and then follow the periodical horticultural exhibitions. The nature and scope of these have been indicated by advertisements. Equalling, as they may be expected to do, the displays of last year, they will form a magnetic force to many. In connection with the whole great undertaking at Earl's Court the endeavour is to do all things well, in the hope that at the end of the season millions of people will have visited the Exhibition, and have no fault to find. Mr. H. E. Milner is the chief, and Chairman of the Exhibition Committee; Mr. George Cadell Vice-Chairman, Forestry Section; Mr. Harry Turner Vice-Chairman, Horticultural Department; Mr. G. A. Loveday, Secretary, and Mr. Richard Dean Manager of Shows.

### THE GLORIES OF MAY.

MAY is essentially a hybrid month, intervening exquisitely between spring and summer, and partaking of the fairest characteristics of both. It is one of the most picturesque seasons of the year. Perhaps its greatest glories are its wayside and woodland flowers. The Gorse, called in Scotland the Whin and in Ireland the Furze, is at present a veritable picture of perfect beauty; and we do not marvel that it drew forth, when he beheld it for the first time, the rapturous admiration of the great Linnæus. Nor less impressive is the splendour of the golden Broom, which seems to set our Scottish glens on fire in many places at this period of the year. Wild Violets are growing luxuriantly on every grassy bank; the Wood Sorrel (*Oxalis acetosella*) is gleaming everywhere beneath the shadows of the trees. This is one of the loveliest, and also one of the least celebrated of sylvan flowers; and yet surely it is as worthy of being sung as the "Daisy" of Burns or James Montgomery. I have endeavoured to do it justice in one of my "Poems of Nature and Life," from which I give my readers the following quotation, unworthy though it be:—

- "Exquisite floweret of the vernal hour,  
Whose tender sweetness steals upon our gaze  
When the wild glory of the glittering shower  
Has faded in the sun's luxuriant rays;  
"Meekest of all the blooms that God has given  
To star this marvellous mystery of earth  
With gentle gleams of that ideal Heaven  
Where Love the beautiful found radiant birth;  
"Even one so insignificant as thou  
May bring high thoughts to men of reverent mind;  
For that meek loveliness thou wearest now  
Flowed from an art our efforts fail to find."

I may state that the Wood Sorrel was a special favourite of my friend Matthew Arnold, who, when acknowledging very kindly and appreciatively my poem upon the subject, told me he was particularly fond of the flower. In one of his many interesting letters he said of another of its vernal predecessors, "I do not know that I have ever mentioned the Snowdrop in my verses; but I have been planting it about my shrubberies, and admire it greatly." He had done so nevertheless, as I afterwards reminded him, in his intensely classical poem of "Tristram and Iseult." Arnold was essentially, like his great teacher William Wordsworth, a poet of Nature; and such genuine inspirations as his "Sohrab and Rustum" (the nearest approximation to the spirit of Homer discoverable in our literature), "Thyrsis," the "Scholar Gipsy," and the sublime masterpiece entitled "Empedocles on Etna" are full of Nature's

own ethereal mystery, sweetness, and light. Like Tennyson, he had two predominating passions—the love of solitude and the love of flowers. To escape from the multitudinous roar of the modern Babylon to his tranquillising garden at Pains Hill, in Surrey, was to him an ineffable delight. There I usually found the serene singer of culture and poet of peace earnestly engaged in horticultural operations.

Not less beautiful than the flowers of the forests and the fields are those of the garden in this gracious month of May. The various and varied fruit trees, especially those of the Apple and Cherry, the latter of which looks as if it had been suddenly whitened with a shower of snow, are at present absolute marvels of loveliness, which no artist, however greatly gifted, could adequately depict. There is something in the mystic perfection of Nature which eludes the grasp and transcends the range of Art. Next to these transitory splendours of the trees I would place for floral impressiveness two borders of Violas, natives of Rothesay, in the fair island of Bute, which appear from their luxuriance to have found in a region more visited by the east wind a congenial home. Among the finest of these are Henry M. Stanley, Ravenswood, Mary Queen of Scots, the Lemon Queen, Abercorn Beauty, Mauve Queen, and Edina, of which the last-mentioned somewhat resembles the older and better known Countess of Kintore.

Since I sent my last contribution to this Journal rain has come in the part of Scotland from whence I write, falling like life, blossoming into beauty upon the place beneath. It is "twice blessed," for it beautifies the flowers upon which it descends, and is itself made fragrant by them in return. Its influence upon the Rose trees has been especially benignant, and many of them are already prolific of buds, and give promise of perfect bloom.—DAVID R. WILLIAMSON.

### BEDDING NOTES.

OWING to the earliness of the season bedding out will no doubt be in progress shortly throughout the country, for there is every indication that it may this year be safely begun at this early date. Although the thermometer in this district frequently touches the freezing point, neither Potatoes, Vegetable Marrows, or Pelargoniums in the open air appear to be injured in the least. This, I think, shows that although such low night temperatures are recorded they only remain at the lowest point for a very short time, and after the long spell of dry hot weather and freedom from severe frosts which we have lately experienced we may reasonably anticipate weather as favourable for the well-being of bedding plants as that which we generally have in June. Spring bedding is with us now (May 6th) in full beauty; even such things as *Silene pendula*, which is generally the latest to flower of all plants used for the purpose, is at its best, and it would be difficult to find a more beautiful plant for growing in masses during seasons like the present one. We have two long beds filled with it, edged with *Cerastium tomentosum*, which find a host of admirers.

Where spring bedding is not carried out the whole of the beds will now be in readiness for planting the edgings of Sedums and Echeverias, other comparatively hardy plants being already planted, and a definite plan of arrangement having been prepared the work may be pushed on expeditiously, planting such as Pelargoniums, Fuchsias, Calceolarias, and Lobelias, reserving spaces for the more tender kinds like Coleus, Iresine, Alternanthera, and Heliotrope. These may be planted a couple of weeks later. Few gardeners of the present day are, however, able to work on these lines, for spring bedding has of late become so general as to necessitate a totally different method of procedure. It is desirable when once the display is begun in April to keep it up with as little break as possible till the end of September. To do this each bed must be left till its beauty is on the wane, be then cleared and replanted with good plants ready at hand. Beds which are now occupied by Wallflowers, Myosotis, *Silene*, Aubrietias, and Daisies will afford good positions for Calceolarias, Zonal and Ivy-leaved Pelargoniums, Begonias and Marguerites. All of these beds having been well manured previous to the autumn planting will require no additions of soil or manure now, but should have the soil deeply dug and thoroughly separated, not forgetting to tread very firmly before planting if the soil is light.

Beds in which Violas are now in full flower only require an edging of Sedum, Aubrietia, or Arabis, to be replaced by one of Lobelia, Pyrethrum, Iresine, or Mesembryanthemum. Violas rooted in August last are now flowering freely, and will continue to do so all through the season if abundance of water is given. These beds may be made still more effective if dotted with tall plants of Heliotrope, Fuchsias, or Abutilons, disposing these dot plants from 2 to 3 feet apart according to their size. This method of planting is especially suited for large beds, those of only



moderate dimensions being the most effective when used as a means of supplying a mass of bright colour. I always employ a good number of two-year-old plants of both Pansies and Violas; these flower very early in the spring, and are now a perfect mass of flower, but will not continue satisfactory throughout the summer. These are provided for in the following way:—A number of Pelargoniums are potted, and have their flower buds removed till the middle of June. By the first week in July the beauty of the Pansies is on the wane; they are then removed, and their places occupied by these prepared Pelargoniums, which are by that time covered with flower buds just ready to open, and with careful planting and watering a good show is obtained almost immediately. A number of Stocks and Asters are also prepared by planting 9 inches apart in nursery beds; these in time take the place of the two-year-old Violas, and create a seasonable and beautiful display late in summer.

Before commencing to set out bedding plants in their summer quarters it is important to see that all have been thoroughly hardened, for it will assuredly prevent much future disappointment. To see Pelargonium leaves turning a bronzy brown colour after planting is a sure indication that the hardening process has not been completed. When the plants are kept in pits or frames up till the time of planting out the lights should be entirely removed for at least a week previous to planting, because it is quite as necessary for them to be inured to sunshine as well as to comparative cold. If, therefore, by any mischance plants have had the lights kept partially over them till they are wanted for planting, Yew, Spruce, or Laurel branches disposed among them for a few days will effectually prevent them from being injured by sunshine during the day or cold at night. It is well to be prepared for such contingencies, but better still to provide against them by exercising care and judgment to have all plants thoroughly hardened by the time they are required.

Should the dry weather continue the work of bedding will unfortunately be more laborious than usual, as regular watering will be absolutely necessary for the well-being of many plants. Even where plenty of water and hose are at command much valuable time is taken up with the work, but where these conveniences are not provided the task is an Herculean one during a season like the present. Much may be done in such cases by obtaining water carts and garden engines of one of the many improved types now advertised, which are labour-saving machines of immense benefit to both employers and gardeners, for it is only by seeing that the plants are thoroughly moist at the roots when planted, and by watering continually after planting till they are established, that the occupants of the flower garden can be kept in a satisfactory condition during seasons of prolonged drought.—H. DUNKIN, *Castle Gardens, Warwick.*

### ANTIPODEAN APPLES AND THE R.H.S. NORTHERN SPY AS A STOCK.

SOME time since I saw in one of your publications an article from the Curator of the Chiswick Gardens, asking for cuttings or plants of any new or rare Apples for the Royal Horticultural Society. I went to a good deal of trouble and some expense in obtaining cuttings of Australian and New Zealand seedlings that are growing and fruiting in this district. I obtained something like three dozen varieties; I carefully packed them and sent them by post to Mr. Barron eight months since, along with a letter. I have never heard anything of their arrival, or received any communication from the Society on the subject. My object in writing this is to show how little anything of the kind is appreciated, and to prevent others, like myself, going to trouble or expense in trying to confer a benefit. Many of the varieties I sent were great improvements on older sorts. Seeing that Bismarck Apple is becoming so popular (and as I was the first to introduce it into England), I thought I should do something further to add to the popularity of colonial-raised seedlings.

Whilst on the subject of Apples, I see by an article in your paper that the Northern Spy does not fruit well or early in England; the same complaint was made here until we commenced to grow it on its own roots. We now find it fruits much earlier, and bears larger and finer crops. I have some trees only three or four years old from the root grafts now bearing beautiful fruit. If "R. M., Newbury," will write to me and send his address I will send him a few young trees grown on their own roots. On account of the woolly aphid attacking the roots of Apple trees so severely here, we use the Northern Spy wholly as a stock, and from my long experience I have no hesitation in saying that, apart from its blight-resisting properties, it is the best stock in the world on which to work Apples. There is a small fortune for any nurseryman who first makes it a speciality as a stock for Apples. I have

never yet met with a variety that does not do well on it, from the Siberian Crab to the Blenheim Pippin. The union is always perfect and the growth good. I have not much faith in my hint being taken; the British public are so wedded to old notions that generally the rest of the world have adapted any new idea before they awake to its utility.—W. J. PALMER, *The Nurseries, Carleton Gore Road, Auckland, New Zealand.*

[Mr. Barron informs us that the grafts referred to never reached him, and that letters are answered in the Secretary's office in Victoria Street. He received grafts from another Antipodean source, but they arrived in bad condition, some packed in crushed charcoal being dead on arrival. We have heard from other sources of the value of the Northern Spy as a stock, and it is noticeable that trees of this variety are singularly free from insects.]

### THE LARCH DISEASE.

THIS subject, introduced by Mr. Williams (page 292), is opportune, and also interesting to those with experience of the disease, which, I am sorry to say, is increasing in these parts. The exceptionally severe weather experienced at what I call an unseasonable period has much to do with the spread of the disease. Take for instance the 7° of frost registered here on the morning of Whit-Sunday, May 17th, 1891. At that time the trees had made 2 inches of new growth. In one plantation alone 15,000 trees were injured, many of them being 15 feet high. Such fluctuations of temperature as this must have an injurious effect upon the trees, other than the destroying of the season's growth. Unfortunately the spread of the dreaded Larch disease is not the only ill caused by adverse weather. The trees are left in such a weakened state that they so easily fall a prey to the attack of insect pests.

The months of February, March, and April last year being so exceptionally dry, directly new growth commenced on the trees injured by frost the previous year it was attacked heavily by the sheath caterpillar of the *Coleophora laricella* moth. Until the shoots were fully developed these caterpillars voraciously devoured the tender leaves, giving the trees a bleached appearance. On a neighbouring estate a portion of a plantation of Larch of 5 acres was slightly injured also by the frost occurring on the date named, but the same trees almost escaped the caterpillar plague last year. However, this year the caterpillar has made sad havoc of those in the plantation named that escaped last year. The weakest trees were first attacked, the ravages gradually extending over three parts of the plantation and slightly affecting some in an adjoining wood, these latter trees being fully 30 feet high. As in our case the trees are growing in a thin bed of soil overlaying a chalk foundation. Until the trees received the check by the frost named a diseased tree was an exception, but now 75 per cent. are affected. The disease appears generally in that part of the tree which is three or four years old, the formative fluid or cambium being larger in that part than in any other, and hence its susceptibility to adverse climatic influence. My opinion also is that the chalk foundation has much to do with the presence of the disease. This mineral has a decided influence on the progress of the trees, and in some cases increases the disease.

We scarcely ever find the disease on trees growing in stiff soil intermixed with flint stones as is present in some parts of the estate, not even in the same plantation where the trees were so much affected by the frost of 1891. The soil in this plantation is so variable that both kinds are found within a short space of each other. However, Larch timber growing wholly in chalk in this neighbourhood is considered to be of superior quality up to at least sixty years old where the trees escaped disease in their earlier stages of growth. The grain of the wood is of that rich colour so pleasing to timber merchants as compared to that grown in soil opposite in character—sand, for instance.

Some persons attribute the Larch disease wholly to a wet and ungenial soil, owing to its want of drainage. I do not dispute that such conditions are favourable to disease, but as to being wholly the case, I am convinced this is a fallacy. On this estate it is not possible to find a wet piece of land. I mean by wet, where water collects on the surface, refusing to percolate for a time. Throughout the whole of the estate chalk is the foundation, varying in the distance from the surface as much as 19 feet in some parts, and as little as 4 inches in others. I find where trees from 3 feet high up to 12 feet receive a check in their growth by frost or insect pests they are more liable to disease. The disease does not in all cases kill the trees, as close here some planted twenty-two years since, and now 40 feet high, were attacked about 6 feet from the ground, but have apparently grown out of the difficulty. It does not follow either that all Larch planted on chalk subsoil necessarily



become diseased. One part of this estate—about 3 acres—on a sharp slope facing north was planted fourteen years since; here but a few inches of soil was found overlaying the chalk. Not a single tree as yet shows the slightest sign of disease; many of them are now 30 feet high. In that particular spot the air is dry, if cold; spring frost does not affect the growth; and no matter how cold the weather may be, if the atmosphere is fairly dry and there is no stagnation of water at the roots, this northern exposed situation is favourable to Larch. I do not find that the Larch bug (*Chermes laricis*) in any way affects the trees, either in growth or disease.

Where the disease is present on trees that have not received a check, either by spring frost or insect ravages, my experience leads me to say it is owing in some way to the chalk foundation, as I cannot find any on trees that are growing in stiff soil in the same plantation. It is a common occurrence here to find trees the leaders of which make 3 feet of growth in one season, and one with a 4 foot shoot has been seen. This latter was on a tree growing in chalk on a northern slope. I also find that more time is required for trees to become well established when planted on a site where but a few inches of soil overlays the chalk than where the surface soil is heavy in character.

From the fact of *Abies Douglasi* growing well with Mr. Williams I should judge that the soil is inclined to be sandy. Here in the natural soil this tree absolutely refuses to live, let alone flourish as a timber tree. We have now a few small trees in the shrubberies, but it is necessary to have their roots in a compost of peat and decayed leaves, if the natural lime-impregnated soil comes in contact with them the colour of the trees change quickly, and they eventually turn quite yellow, and ultimately die. We have had at least a dozen trees, in height ranging from 6 feet to 10 feet, go off entirely. It cannot be aught else beside the total unsuitability of the soil that compels this species to behave thus. The ordinary Spruce Fir makes rapid growth here. I am informed up to forty years of age it succeeds really well, after that the trees deteriorate. I cut down a few years since several fine specimens of *Abies excelsa monstrosa* seventy years old, quite firm in the wood, but the branches exhibited distinct signs of decay.—E. MOLYNEUX, *Swanmore Park, Hants.*

## WINGLESS INSECTS OF THE FLOWER GARDEN.

THE subject of insects is not wholly "concluded," as inadvertently stated recently, for we have yet to briefly notice an important and very distinct group of wingless insects which are on the boundary line, forming a kind of link between these and the Crustaceous order. At one time, indeed, naturalists classed them with lobsters and crayfish, but modern science regards them as true insects, though they have no chrysalis state. There is a larval, or imperfect condition, in which changes of skin occur, and of appearance also, but the creature never ceases to eat during its progress to the adult stage. Our first division of these is the Myriapods, a general name which says too much, for no specimens have a thousand legs, even in the millepede division, the insects of which have, in some places, the popular name of "maggy-many-feet;" certainly counting them is not easy, owing to the quick movements of most species and the closeness of the segments. In the centipede division, however, some species have about a hundred legs, but most have a less number than that. Tough and slim-bodied, some of the centipedes have been mistaken for the larvæ of a troublesome beetle, and in consequence called "wireworms," the true wireworms being the progeny of one of the species of *Elatér*. As foes to farmers and gardeners they are far more terrible than any of the Myriapods.

Regarded from the horticulturist's point of view, the jaws of these insects are much more important than their legs; by them they are divided into two sections, one of which is no doubt capable of doing much mischief to plants, and the other but seldom feeds upon vegetables. Besides these leading groups, there is one small division of Myriapods, where the mouth is furnished with a sucking apparatus, and has no jaws. The Julidæ, which are the millepedes of our gardens, hauntings of roots, bulbs, and the crowns or underground stems of plants, have jaws of the usual kind, well suited for biting vegetable substances, though it has been repeatedly proved by observation that they vary their diet by sometimes eating soft insects and molluscs, such as slugs or little snails. But the Scolopendridæ have an apparatus quite different, which affords proof that they are of carnivorous habit. Instead of the jaws or mandibles, these, the centipedes, have a sort of nipper more like a leg than a jaw, which has a sharp point and a tube that is connected with a poison gland. Hence it is that the bite of the large centipedes of hot countries is painful or even dangerous, and even the species of our own land are noticed to kill rapidly any insects

they may seize. That the centipedes generally have an evil repute amongst gardeners is a positive fact, but the evidence of structure and habit goes to prove, that though they are often found upon the injured roots of plants, their presence is beneficial, since they come to prey upon the insects that have caused the damage. Some think that even when a centipede is found coiled up within a Plum or Apricot, having entered by the stalk, it is only in the fruit to devour aphides or mites that have previously entered owing to commencing decay. Curtis satisfactorily vindicated a species of centipedes from the accusation of being concerned in the Potato disease. Myriads of them did occur amongst the infected tubers in many places, but they had neither caused nor aggravated the disease.

The millepedes, however, do feed upon some of our root crops, and in our beds and borders, also in conservatories, they attack bulbs, the stems of some herbaceous plants, and roots, especially those of a succulent nature. Like the woodlice, they show strong partiality for Orchids, eating eagerly the young fibrils of the roots. Frequently the plump millepede *Glomeris limbata* is taken for the Armadillo woodlouse, and the two have a marked resemblance, but the woodlouse has a harder shell and longer antennæ. Exotic specimens of these millepedes occasionally arrive in company with plants from Asia and Africa. When they infest hothouses it is a good plan to set traps for these, similar to those for woodlice, such as Apples and Potatoes with holes scooped in them, or small pots filled with partly dried horse droppings. Both offer much attraction to the insects, and scores may be captured and easily destroyed by shaking out the contents of the traps into boiling water.

The snake millepedes offer a contrast to their stout brethren above mentioned, and as a matter of course they are more clever at concealing themselves; few gardeners notice them in the juvenile stage, though they are not so slim then, and start life with only half a dozen legs. This moderate allowance of limbs is soon increased, for every new segment has another pair, till a total is reached of above a hundred. Owing to the form of millepedes they cannot put forth the muscular power many insects can, but they show much dexterity in enlarging any small holes they may find in hard tubers or stems, and they will manage to work into the interior of large pulpy roots, while the small fibres much delight them. *Julus terrestris* is our largest British species; it is upwards of an inch in length when full grown, and is very like the next species in size, called *J. londinensis*, from its frequent occurrence in London gardens; but the former species has a little spike at the tail, and longer antennæ than its relative. Another species, *J. latistriatus*, is inclined to be sociable, and small parties of them appear unexpectedly sometimes when ground is being turned over. Some of the Juli haunt moss and decaying stumps of trees. Possibly, to some people, the name given to another well-known species, *J. pulchellus*, may seem inapplicable; they may not connect the idea of beauty with a millepede. Yet it has not an objectionable appearance when examined by a magnifier, the slender and pale body being adorned by a double row of bright crimson spots. Many gardeners report this as one of the specially injurious snake millepedes, attacking plants in pots and in borders, often selecting those of the Liliaceous order; it rivals the *Eucharis* mite in damaging that favourite flower.

A connecting link between millepedes and centipedes is in the genus *Polydesmus*. These insects are flat-backed, and have the segments granulated, also they have a harder texture than the Juli, but the limbs break off with a slight touch. Our largest species is *P. complanatus*, which grows nearly to the length of an inch, and is of a whitish blue colour, frequently, like the Juli, family or friendly parties surround the roots of choice plants, rousing the ire of the cultivator. Pansies, Auriculas, and Anemones are injured by them, the cause of the mischief being sometimes unknown even if suspected. It is difficult to kill the insect without also risking farther injury to the plants. When millepedes lurk in flower-pots watering with clear lime and soot water is found to be of some use, also a very weak solution of carbolic acid has been tried, not more than ten or twelve drops to a gallon of water. Some have commended hellebore solution, strength 2 ozs. to a gallon; this certainly does no harm to plants, and will destroy many other insects besides millipedes which infest roots and stocks.—ENTOMOLOGIST.

## TOMATO GROWING.

[By Mr. E. D. SMITH: read at a meeting of the Sheffield Chrysanthemum Society.]

(Concluded from page 360.)

### WATERING.

It is possible by judicious attention to sprinkling the plants and soil daily for a time in bright weather to retain the soil moist without watering too freely. The supplying of water generally must be pro-



gressive. Too much in the early stages of growth hinders the formation of roots by souring the soil; too little when the plants attain to a fruiting state causes the flowers to drop. The rule to follow is water carefully until established. When fruiting commences and heavy crops draw upon the plants' resources water abundantly. Do not wait at any time for the plants to flag, but anticipate their requirements. With rapid evaporation in hot sunny weather, and the soil fully occupied with roots, water is needed often twice a day, each time reaching the most distant rootlet. Half supplies may keep the plants in existence, but they will not promote their vigour and productiveness.

#### TRAINING.

The Tomato is naturally a wild grower and needs a certain amount of restriction. There is no need to dwell on the disadvantages of crowded growth. If too rank it will produce nothing, or at the best poor fruit. The energy and vigour of the plants are wasted unless each branch has room to extend with space laterally so that a due amount of light and air can reach every leaf. The principles of training the Tomato are these: Each branch will produce fruit providing it is allowed space on each side of not less than one foot from the adjoining branches. There are constantly appearing from the axils of the principal leaves on every main branch a succession of side shoots which, if allowed to grow, are the means of choking the plants with useless growth. These need constant suppression soon after their appearance, when they can be easily rubbed out. After attaining to more than an inch or two in length they must be cut out. The most satisfactory plants, as a rule, are those trained to a single stem, no other main growth being allowed, and all the side growths carefully removed. Large, fine fruit and abundant crops as a whole are secured by this method. Plants, however, in every case need not be confined solely to one stem; more may be allowed with good results, but each must be treated exactly like the single-stemmed examples, all lateral shoots being rigidly suppressed as they appear. The bunches of flowers are produced on the main stems quite sufficiently numerous to form good crops of fruit resembling in quantity "ropes of Onions."

#### SETTING THE BLOOMS.

There is not much difficulty in setting abundance of fruit when good culture is intelligently carried out. Everything is then favourable to proper fertilisation, provided the atmosphere is warm and dry in the middle of the day and a continuous current of fresh air freely circulates about the plants always. But as a sure and certain means of securing a good set it is very little trouble to go over each plant, gently tapping the bunches of bloom for the purpose of dispersing the pollen. Do this at, or shortly after midday. Some growers syringe lightly to effect the same purpose. I prefer the former way. Others never trouble at all about fertilisation, but leave it to correct methods of management affecting it naturally.

#### TOP-DRESSING.

As before stated the first top-dressing is given when fruiting commences. Only a slight dressing of a couple of inches is given each time, and it should consist of rich material. Loam and manure, with a little bonemeal, soot, and wood ashes all well combined together, form an admirable mixture which the plants appreciate, as evidenced by the avidity with which numerous white rootlets take possession of it and appear on the surface within a week after the material has been applied. I continue applying top-dressings of this kind until the pots are filled.

#### FEEDING.

Up to this stage feeding with liquid manure has not been practised because not found to be really necessary. The mass of roots now in possession of the plants through the multiplication of fibres from continual top-dressing renders something necessary which can penetrate quickly through the whole mass and carry rich nutriment with it. Nothing can do this like liquid manure made from animal deposits, varied sometimes with sprinklings of artificial manure well watered in. Clear soot water is an admirable stimulant, and can be easily made by mixing soot with water at the rate of a peck to thirty gallons, clarifying it—that is, making it clear—with a spadeful of quicklime well stirred in. After a few hours this will be clear enough for use.

#### THE IMPORTANCE OF AIR.

One of the most important requirements of Tomatoes is a constant supply of fresh air. I am convinced that many houses of Tomatoes are ruined through neglect of this. Tomatoes cannot succeed with weakened stems and soft foliage, the result of too little air. Such plants are prone to disease, especially if alternations of temperature should ensue. By this I mean a great disparity between the day and night temperature, so that an excessive deposition of moisture takes place upon the stems and foliage. This, going on for some time, produces disease, or rather prepares the plants for its reception. The antidote to disease is abundance of air from the early stages of growth, at the same time using a little fire heat, especially in dull cold weather, a buoyant dry temperature being very beneficial to the steady development of the plants, as well as the free setting and perfect flavouring of the fruit.

Perhaps the question may be asked, How is it that you recommend the employment of fire heat in summer, when it is a well-known fact that Tomatoes will succeed without? Well, the answer is that they succeed better with when it is used with discretion. I think it wise to continue it until the end of June, admitting plenty of air constantly to the house. After that period it may, in the best summer weather, be

dispensed with, resorting to it again, however, during wet sunless periods, as it is at these times that fungoid germs float in the atmosphere, and where they can find a suitable host plant on which to settle they forthwith develop and multiply amazingly fast. The aim of the cultivator should be to so grow and manage his plants that they become disease-proof. The air in the interior of the house mainly dry and kept in circulation by the constant entry of fresh will effect this most desirable end.

Cool house treatment in warm summers is prolific of good results. In houses of this kind the plants are best grown in pots, so that heavy



FIG. 68.—IRIS SAARI NAZARENSIS.

crops of green fruit in autumn may stand a chance of being ripened by the pots being conveyed to warm structures.

#### VARIETIES.

There are abundance of good varieties. The leading kinds at the present time are Ham Green Favourite, Conference, Challenger, Acquisition, Hackwood Park, and Perfection among the red fruit; while Blenheim Orange, Golden Queen, and Dessert are the best yellows. —E. D. S.

#### IRIS SAARI NAZARENSIS.

THE charming Iris for which Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, received an award of merit at the meeting of the Royal Horticultural Society on Tuesday, April 11th, will make a useful and welcome addition to the number of beautiful forms of this family already at our disposal. It is a dwarf grower, the stem rising about 9 inches above the ground level, and the flowers are very attractive. The standards are transparent white, the falls white dotted thickly with brown, and with a large purplish patch in the centre. Fig. 68 represents it.





**EVENTS OF THE WEEK.**—As announced elsewhere the principal events of horticultural interest to take place during the ensuing week will be the opening of the Gardening and Forestry Exhibition at Earl's Court on Saturday, May 13th. The inaugural ceremony will be performed by H.R.H. the Duke of York, K.G. The first summer Show of the Royal Botanic Society will be held in the Gardens at Regent's Park on Wednesday, May 17th, and an Orchid Show will open at the Earl's Court Exhibition on the 18th inst.

— **THE WEATHER IN LONDON.**—We have to again record a week of dry bright weather. No rain has fallen in the metropolis, although signs of it have appeared at various times. As we are going to press it is bright and sunny and with rather cold winds, which have been prevalent all the week. There has been about twelve hours of sunshine on most days.

— **WEATHER IN THE NORTH.**—The week ending 9th inst. has been dry, no rain falling since the 2nd. The drought has been strong on several days and some of the evenings especially cold from N.E. winds. The barometer is very high and steady. Hawthorn blossom is appearing here and there.—B. D., *S. Perthshire*.

— **NATIONAL TULIP SHOW.**—In consequence of the hot weather this Show will be held in the Botanical Gardens, Manchester, on Saturday next, the 13th inst, instead of on the 23rd of this month, as previously announced.

— **ACCIDENT TO MR. SAMUEL BARLOW.**—We regret to learn that this gentleman had a severe fall down some stairs in his Manchester warehouse last week, breaking his arm and being otherwise much bruised. This will, it is feared, compel his absence from the Tulip Show, but his flowers will be there. We are pleased to hear that Mr. Barlow is progressing favourably.

— **LATE GARDEN TULIPS.**—*Apropos* of Tulips at Long Ditton, some beds of Buonoventura, scarlet flaked with gold; Picotee, white with a wire edge of rosy carmine; and Golden Beauty, the deepest of all yellow Tulips, have been particularly admired, and perhaps not less so have Golden Eagle, Elegans, and Retroflexa. The flowers of all these mentioned are particularly suitable for vase decoration, and it is noteworthy that they remain fresh and beautiful for a considerable time in water.

— **WATERING AND MULCHING OLD FRUIT TREES.**—A correspondent referring to the practice of watering and mulching round the stems of large trees to a radius of 3 feet, thinks much more good would be done by similar applications twice the distance from the trunk, where there are more feeding roots. He has had to remove a Morello Cherry, and suckers have grown from the roots 30 feet from where the tree was planted, and thinks mulching round the stem merely would not have been of much benefit to that tree.

— **LARGE SNOWDROPS.**—It is scarcely possible from the description given by "W. T., *Blantyre*" (page 322), of the large Snowdrop at Craigbet, Renfrewshire, to say with any certainty what it may be. It is probably a seedling of exceptional merit, and the soil and climate appear to be favourable to the development of large flowers. The Galston Snowdrop does not appear to retain its exceptional size and stature in cultivation. It may be said, however, that the only garden in which it is growing is one apparently uncongenial to Snowdrops.—S. ARNOTT.

— **FIREPLACE DECORATIONS.**—For an ordinary sitting-room fireplace there is nothing more cool-looking during the summer and that gives less trouble than the common Hart's Tongue Fern (*Scolopendrium vulgare*). When the new leaves are fully developed toward the end of May dig up the roots, placing them in jam pots or deep saucers, in fact anything that will contain water. By standing the jars in the fireplace amongst moss or the ordinary paper shavings the drooping fronds look really handsome, and will last the whole summer if carefully watered when required, which is not often if the receptacles are of fair size.—E. M.

— **GARDENING APPOINTMENT.**—Mr. Geo. Clark, foreman to Mr. J. Lambert, Powis Castle, succeeds Mr. Sensical as head gardener to the Earl of Powis, Walcot Park, Shropshire.

— **PUBLIC GARDEN FOR BIRMINGHAM.**—It is reported that a sum of £4000 will be expended in laying out as a public garden and open space the churchyard of St. Paul's, Birmingham.

— **PROFESSOR OF BOTANY FOR BRESLAU.**—We understand that Dr. Pax, lately of Berlin, has been appointed Professor of Botany and Director of the Botanic Garden, Breslau, in succession to the late Professor Prantl.

— **EARLY STRAWBERRIES.**—We gathered our first dish of ripe Strawberries from the open air to-day, May 8th, the fruit large and of excellent flavour.—H. RICHARDS, *Roehe Court, Salisbury*. [Our correspondent omits the name of the variety.]

— **EARLY GOOSEBERRIES.**—A correspondent informs us that Mr. Steel of Fulham gathered Gooseberries for market on April 26th. May 14th was the previous earliest date of gathering of which he has record. Mr. Steel is an extensive market gardener.

— **EARLY PEAS.**—As Mr. W. N. White has been comparing one season with another with respect to Strawberries, I thought a note with regard to Peas would be of interest. I have gathered my first dish of Peas this day, May 8th, William Hurst, sown on the 14th of February, 1893. Last year from a sowing on February 16th we gathered June 9th, or a month later than this year.—D. H. MOIEST, *Marley Hall Gardens, Eamouth*.

— **TIARELLA CORDIFOLIA.**—This False Mitrewort, or, as some call it, the Foam Flower, is well worthy of a place on the rockery or at the front of the herbaceous border, where flowers are appreciated during April and the early part of May. The bronzy marbled leaves are not the least attractive part of the plant; they also form a decided contrast to the pure white pedicel-shaped flower spike.

— **ALYSSUM SAXATILE COMPACTUM.**—Although regarded as a common plant this Maddewort provides a mass of colour on the rockery or elsewhere that no other plant does at this time of the year. The corymbose flower heads of yellow are produced in masses and last a long time in perfection. Although, as a spring bedding plant or as an edging to paths or borders, it is showy, yet on a large piece of rock where it can droop gracefully over seems its proper home. The same plants last a number of years.

— **GENTIANAS.**—The present hot and dry weather has been favourable to these plants, either on the rockery or in the borders, provided they were kept moist at the roots. The bright sun brought out the richness of colour to perfection. Although some persons prefer the smaller form of verna I like the massiveness of acaulis, the intensity of colour is more decided.—E. M.

— **WEATHER AT SWANMORE.**—Another week has passed since my last note on the weather, and still no rain here. With the exception of 0.04 inch recorded April 16th, and 0.02 inch April 29th, we have experienced sixty-four rainless days in succession. The prospect of a shower seems still as remote as ever. Altogether there has been a fall in the temperature; on several days the thermometer did not rise beyond 70° in the shade; once it has fallen as low as 35°. During the night of the 5th the lowest reading was 45°; the temperature during the day preceding being 87°. We are now, in addition to the great drought, experiencing strong easterly winds, which are parching, as well as being cold, and certainly not favourable to vegetation.—E. MOLYNEUX, *Swanmore Park*.

— **MARKET GARDENS AND THE DROUGHT.**—Some of the market gardeners in Middlesex and Surrey are suffering considerable loss in consequence of the dry weather. In the country districts of West Middlesex the drought is having a disastrous effect upon many of the gardens supplying the metropolitan markets. Especially is this the case in those localities where extensive grounds, fully planted with early vegetables, are at a distance from a water supply. Thousands of young plants are being dried up for want of moisture, and to market gardeners, as well as to farmers, the outlook is extremely gloomy. Never was an abundance of rain so sadly needed in country districts as at the present time. Although the rainfall in London has been excessively slight, from the country better accounts are to hand. The atmospheric conditions are now said to have undergone a complete change.



— **SEEDLING CLIVIAS.**—Messrs. John Laing & Sons send us seedling Clivia blooms to show the progress that is being made in these flowers. One of them is  $3\frac{1}{2}$  inches in diameter, colour orange red with white-and-yellow throat, the white very clearly defined.

— **GROS MAROC GRAPE IN COOL HOUSES.**—Will any of your correspondents having experience of Gros Maroc Grape say if it will do grafted on the Black Hamburgh in a cool vinery? Will it ripen there?—B. J.

— **CRICKET.**—Many young gardeners, and some old ones, are interested in cricket, and may perhaps like to know that connected with the firm of Messrs. Sutton & Sons, Reading, there are three teams of players, and that no less than fifty matches are arranged for during the present season.

— **SPIDER-WEB SEDUM.**—It will be remembered by some that last year I made reference to the effects of this Sedum grown under glass. At the present time those grown under clear glass are prettily webbed, each rosette having from three to four tiers of young ones formed; while those grown under the rough glass scarcely show growth, and very little of the spider-web appearance. I have observed a similar effect upon other plants, and cuttings under the two kinds of glass.—W. T.

— **THE SCOUNDREL SPARROW.**—As one who must plead guilty to harbouring the sparrow I fear any expressed sympathy with your able contributor "W. R. Raillem" (page 341) may be considered hypocritical. It is, however, tendered with the utmost sincerity, and I am disposed to attribute part of my immunity from damage by the pert little bird to the presence of the trough of the garden pump, which is always kept full of water, and is the resort of many thirsty birds. May I ask your correspondent if water is readily available in his orchard? His reply may help to clear up a matter in which there is some doubt.—S. ARNOTT.

— **M. ROTHSCHILD'S NEW WORK.**—We have received from M. Rothschild of Paris a French treatise upon the "sowing and planting" of forest trees, and generally upon the formation of hedges, shrubberies, and plantations in parks, gardens, and woodlands. It consists of some 350 pages of clearly printed and well-arranged matter from the hand of Mr. D. Cannon, who, though resident in France for the last fifteen years, is by birth an Englishman. The subject is treated in twelve chapters, and elucidated by the help of 380 engravings. Though adapted to serve as a practical handbook upon the subject, it also acts as a work of reference in indicating the authoritative sources from which a deeper knowledge of the treatment of trees may be obtained.

— **DEW.**—For some time past letters on how dew is produced have been going the round in our daily papers. I have always understood dew and rain to be in a sense synonymous, both being condensed evaporated moisture. That it depends entirely upon the electric state of the atmosphere how far the dew may be spread or separated, and whether it shall fall as dew or rain. Does not all dew first rise, or in other words, the dew that rises and the dew that falls are equal? it being simply a question of temperature whether it shall be held in suspension, or formed into fog, mist, or fall as dew. Independent of these remarks, dew appears to play a very important part in relation to electricity and the weather. When it dries up from the grass shortly after sunrise, and the mist gradually disappears, a fine day may be expected; but when the grass remains wet till far in the day rain follows.—T.

— **INSECTS ON FRUIT TREES.**—Just now fruit trees are being very generally attacked by caterpillars and other insects, and the Board of Agriculture has therefore very opportunely issued a leaflet detailing the best remedies to be adopted. The best and most common method is to syringe the trees with a softsoap mixture by means of one of the machines which are now well known. For this purpose several mixtures are given as follows:—1, The extract of 10 lbs. of quassia (obtained by boiling the quassia in water) mixed in 100 gallons of water, and with 7 lbs. of softsoap added. 2, The extract of 5 lbs. of quassia to 100 gallons of water, with 6 lbs. of softsoap and 4 pints of petroleum well stirred in. 3, The extract of 5 lbs. of quassia to 100 gallons of water, with 6 lbs. of softsoap and 4 pints of Calvert's (No. 5) carbolic acid. 4, 8 lbs. of softsoap, 2 lbs. of finely ground hellebore, and a quart of petroleum, boiled and well stirred together, and added to 100 gallons of water. In the case of all these mixtures (which can be made in proportionate quantities for small gardens) the softsoap is dissolved in a tub with hot water; the quassia chips are boiled in

water and put into another tub; where petroleum is used it should be well stirred up with boiling soap and water before it is added to the cold water. Besides the above harmless dressings a number of poisonous ones are described. These, however, require very great care in their use, and are, moreover, dangerous.

— **DRY SPRINGS.**—In 1852, after a long continuance of heavy rain, the weather cleared on the 14th of February, and there was no rain till the middle of May. The following year we had another mild winter and heavy rainfalls, but it cleared again on February 15th, and was fair for six weeks. During the year 1836 the weather was very cold, and crops were poor. The following winter the frost was severe remaining thirteen weeks, being the middle of April before thaw came; subsequently there were heavy falls of snow, and May was advanced before crops were sown. It was, however, a good summer that year, and not a late harvest. The years 1838-39-40-41 were similar in the spring to the present one; 1842 was cold throughout, 1843 was one of the finest and earliest seasons on record, then 1844-45 introduced the Potato disease; and although good seasons have intervened, the weather up till 1893 has been getting gradually colder.—W. T.

— **GOLD-LACED POLYANTHUSES.**—I do not know who made the award, but I was astonished to find that I should so easily be able to discern what professed experts had failed to see—that in the three gold-laced Polyanthuses placed first at the Auricula Show at the Drill Hall, Napoleon III., a rather coarse red ground, was shown twice, but the second plant under the name of John Bright, a most easily recognised black ground. I drew the attention of a prominent member of the Society to the impropriety, and he saw as well as I did what was so wrong. The mistake could not have been unintentional, and it was astonishing, with one or two plants of John Bright close by, the judges should have made such a mistake. Lancer, red ground, and Lancashire Hero, if it were true, black ground, were the best. All the others were much below par indeed. Unless grown to bring out the finer points in gold-laced Polyanthuses it seems hardly worth growing them at all.—A. D.

— **SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR APRIL.**—Mean temperature of month,  $48^{\circ}7'$ ; maximum on 20th and 24th,  $74^{\circ}8'$ ; minimum on the 12th,  $24^{\circ}2'$ ; maximum in sun on the 20th,  $126^{\circ}4'$ ; minimum on the grass on the 12th,  $16^{\circ}1'$ ; mean temperature of air at 9 A.M.,  $48^{\circ}3'$ ; mean temperature of soil 1 foot deep,  $47^{\circ}9'$ . Nights below  $32^{\circ}$ , in shade nine, on grass nineteen. Total duration of sunshine 218 hours, or 52 per cent. of possible duration; we had two sunless days. Total rainfall, 0.34 inch; rain fell on four days. Average velocity of wind, 6.7 miles per hour; velocity exceeded 400 miles on one day, and fell short of 100 miles on eight days. Approximate averages for April:—Mean temperature,  $45^{\circ}4'$ ; sunshine, 123 hours; rainfall, 1.65 inch. The warmest and driest April for at least seventeen years; the daily range of temperature was exceptionally large, and whereas the day temperatures were  $8^{\circ}$  above the mean, the night temperatures were  $2^{\circ}$  below the mean. The percentage of sunshine is larger than in any month since the record commenced in 1881. The total rainfall for March and April amounts to less than an inch. Vegetation is about a month earlier than last year, but rain is much needed. Hawthorn and Horse Chestnut in bloom on the 23rd. Queen wasps very numerous this spring.—J. MALLENDER.

— **THE WEATHER LAST MONTH.**—The weather during April was very dry. The first fifteen days gave no rain, and thus completed a period of twenty-nine days without a drop of rain. We had twenty-four bright days, twelve of which were clear. The wind was in an easterly direction twenty-two days. Barometer—highest reading, 30.57 at 9 A.M. on 8th; lowest, 29.88 at 9 P.M. on 29th. Total rainfall was 0.43 inch, which fell on four days, the greatest daily fall being 0.25 inch on the 16th; this is 1.49 inch below the average for the month, making the total fall for the year up to the end of April 4.22 inches, which is 2.80 inches below the average for this period. Highest shade temperature,  $80^{\circ}$  on the 20th; lowest,  $21^{\circ}$  on the 14th; lowest on the grass,  $15^{\circ}$  on 14th. Mean maximum temperature,  $63^{\circ}90'$ ; mean minimum,  $36^{\circ}23'$ . Mean temperature of the month,  $50^{\circ}06'$ . Most of the trees were in leaf by the end of the third week. The Oak commenced to expand on 27th. Hawthorn flowers began to open on 24th. The nightingale was first heard here on 20th, and the cuckoo on 22nd. The garden spring ran 20 gallons per minute on the 30th. The continued drought is causing great inconvenience to farmers and others in this neighbourhood. Late sown corn is very patchy, and the hay crop will be a poor one.—W. H. DIVERS, Ketton Hall Gardens, Stamford.



— **ROCKERY PHLOXES.**—At the present time Phloxes of the subulata section (commonly called Ground or Moss Pinks) are exceedingly showy on the rockery. This section of hardy, dwarf-growing plants is not nearly cultivated as much as its merits deserve. Although the rockery is perhaps the more situation for their growth it is not absolutely necessary that they grow there only. As edgings to paths or borders where a few stones might be arranged to form a narrow border, success would be assured providing of course the drainage was sufficient in the case of heavy and retentive soil. In soil of a light character and when thin in bulk, I find these Phloxes require abundance of moisture at the roots to keep them in a flourishing condition in the sunniest places on the rockery. It is here where they thrive the best, enjoying the full sunlight with a moist base. In patches of not less than 2 feet square of each colour a grand display is effected. To me it is surprising that they are not more extensively grown, considering the ease with which a stock of plants may be worked up. Good varieties are Nelsoni, pure white; The Bride, white, with red centre; Vivid, fiery rose colour; Pallida, rose, shaded lilac; Frondosa, bright rose colour; and atropurpurea, purplish rose, with a crimson eye.—E. M.

— **THE WAKEFIELD PAXTON SOCIETY.**—At the recent meeting of the members of this Society Mr. H. Crowther, curator of the Leeds Museum, delivered an extremely interesting and instructive discourse on "Soils and Manures." Mr. Crowther first mentioned how soils are formed by the disintegration of rocks, and described the different kinds of soils produced by the mixture of loam, sand, clay, calcarene, and marl, with humus resulting from vegetal action. In adverting to the four-course system of agriculture he showed how each crop found in the soil its most appropriate aliment, and said our forefathers must have been very keen observers, for they had by experience hit on true principles, so that even we with our scientific knowledge could not do much better than they, though we worked with reason, whereas they laboured in the dark. He then dealt with the various manurial agents, showing the chemical constituents of each, and demonstrating why certain soils and certain crops need certain manures, and explaining their suitability and unsuitability in other cases. Many diagrams and illustrations were shown, portraying the marvellous results of the application of right principles in manuring, as gained by experimental culture by Lawes, Gilbert, and others.

— **THE TEA INDUSTRY IN CEYLON.**—In his report for 1892 Dr. Trimen, the Director of the Royal Botanic Gardens, Ceylon, refers to the fact that of every 100 lbs. of tea consumed in England during the year 84 lbs. were of British growth, viz., 53 in India and 31 in Ceylon, only 16 lbs. being the produce of China. There was an increase of nearly 2,000,000 lbs. in the direct export of Ceylon tea to Australia, viz., 5,166,154 lbs. against 3,210,593 lbs. in 1891; and Dr. Trimen thinks that the costly advertisement at the forthcoming Exhibition in Chicago may reasonably be expected to lead to a large sale in the future in America. Ceylon, he says, urgently needs this; for while there is no reason to fear any drawback to continued success as far as cultivation and manufacture are concerned, there is a real danger of over-production; and its consideration as a possibility, by no means remote, induces him earnestly to recommend those concerned to devote some portions of their land to other cultivations. In the low-country especially much caution should be exercised in opening further land in tea estates. One result of the enormous development of the tea industry in the island is unfortunate. The industry so overshadows all other cultivations that there is now little room for trial or experiment with smaller products on estates, and not much stimulus to investigate them in the Botanic Gardens.

— **HONEY-PRODUCING PLANTS IN AUSTRALIA.**—The Agricultural Department of New South Wales has been making a series of interesting and useful inquiries as to the plants most visited by bees in the various districts of the colony. Some of the results are set forth in a recent number of the Department's "Gazette." It has been clearly proved that the flora of Australia includes honey-producing trees, shrubs, and plants of a high standard of excellence; the honey produced by bees in the near neighbourhood of the forest being of the finest quality, and having few (if any) faults. While a Gum Tree is in bloom the bee will pass over the most tempting plant in a garden, and wing its way to the borders of the bush; but, on the other hand, a field of Maize in tassel is a source of the greatest pleasure to the busy little workers, who swarm in countless numbers, collecting the pollen so necessary for their wants. The plants which next seem to have the greatest attraction are the fruit trees, familiarly called

summer fruits. Clover (both white and red) yields a large quantity of first-rate honey, and bees kept at places where Clover grows never fail to visit the modest flowers of the plant; Dandelion, also, is a valuable honey-yielding flower, and is noted in all districts from Albury to Tenterfield. As to the size and colour of the flowers most affected by the bees, much diversity of opinion exists among apiarists, and in the face of the very conflicting replies, the "Gazette" thinks it would be vain to try to determine what coloured flowers are most attractive.—(Nature.)



DENDROBIUM BRYMERIANUM.

THIS is a beautiful Orchid, and is remarkable on account of the delicate, branching filaments of the lip, forming a deep fringe or beard, which is its chief attraction. The flower is a golden yellow throughout. The plant should be potted in good peat used in a very rough state, with a little moss and charcoal, and grown in a warm moist house in summer. In winter it requires rather more drying than the majority of the evergreen kinds.

CYMBIDIUM LOWIANUM.

This species is a most useful, distinct, and handsome Orchid, easily grown, free flowering, and very long lasting. The spikes on well grown plants attain a height of 2 or 3 feet, and are clothed with flowers almost from top to bottom, and as these will remain fresh for nine or ten weeks it is very useful for exhibition. It has long arching flag-shaped foliage and light green bulbs.

It succeeds best under pot culture, and may be potted in peat, light turfy loam, and moss in about equal proportions. Many growers recommend a portion of sand, but this is sure sooner or later to run together, spoiling the compost by preventing aëration, and destroying that "sweet" condition of the soil which is so desirable.

This Orchid requires plenty of heat and moisture and a rather shady position. From the time the flower spikes show until they are showing colour occasional applications of manure water are necessary, that made from cow manure being probably the most suitable. The flowering season is usually from February to May or June.—H. RICHARDS.

HYBRID ZYGOPETALUMS.

IN our last issue a brief allusion was made to Part ix. of Messrs. J. Veitch & Sons' "Manual of Orchidaceous Plants," and we then remarked that an occasion may arise for a further reference to this excellent work. This opportunity has now come, and we have pleasure in reproducing some notes on hybrid Zygopetalums with an illustration of *Z. Sedeni* (fig. 69), for which we are indebted to Messrs. Veitch & Sons. The kind figured is of exceptional interest, inasmuch as it was the first hybrid Zygopetalum raised, this being done by Mr. Seden some years ago. A few additions have since then been made, but as will be seen by the following quotations the number of hybrid Zygopetalums has not swelled to any considerable extent.

"Hybrids between species of Zygopetalums are still few in number, and of those that have been raised, the vigorous growing type species Zygopetalum Mackayi, its variety crinitum and *Z. maxillare* have participated in the parentage of all of them. Of the four hybrids described below, the first two are results of crosses effected between the two species mentioned by different operators, one using the original *Z. Mackayi*, and the other its variety crinitum; as a natural consequence the two hybrids very closely resemble each other. A fairly numerous progeny was obtained from both crosses.

"The last two are of exceptional interest, for they are generic crosses between Zygopetalum and Colax. In conformity with the nomenclature adopted in this work for bigeneric hybrids, they take the name of Zygocolax. In both cases the progeny was extremely restricted."

**ZYGOPETALUM CLAYI.**—This is the result of a cross between *Z. Mackayi crinitum* and *Z. maxillare*, and is described as follows:—"Pseudo-bulbs and leaves intermediate. Flowers as large as those of the seed parent; sepals and petals brownish purple, with a narrow green margin, and sometimes with a few narrow transverse



green streaks; lip nearly as in pollen parent, purplish blue with darker lines; the ridges of the crest dark violet blue, the furrows whitish; column violet purple above, streaked below the stigma." It was raised by Colonel Clay of Wallassy, Birkenhead.

**ZYGOPETALUM SEDENI.**—We are told that this is the result of a cross between *Z. maxillare* and *Z. Mackayi*. "Pseudo-bulbs and leaves nearly as in *Z. maxillare*; racemes 6 to 9 flowered; flowers intermediate in size between those of the parents; sepals and petals brownish purple with a metallic gloss, and sometimes with two or

rotund, erect, indigo blue, the fleshy crest between them nearly as in *Zygopetalum maxillare*, the ridges blue and the furrows white; the front lobe transversely roundish, oblong, indigo blue, sparingly mottled with white. Column broad, purplish blue, anthers white." This was raised by Mr. Seden at Messrs. Veitch & Son's nursery, and is described as "the handsomest of the *Zygopetalum* hybrids yet obtained."

**ZYGOCOLAX VEITCHII.**—This is a bigeneric hybrid between *Zygopetalum Mackayi* and *Colax jugosus*. "Pseudo-bulbs broader



FIG. 69.—*ZYGOPETALUM SEDENI*.

three pale transverse bands; lip bright violet blue, more or less striated; crest and column dark violet blue." Raised by Mr. Seden at Messrs. Veitch & Son's nursery, and figured in the illustration.

**ZYGOCOLAX LEOPARDINUS.**—An interesting bigeneric hybrid between *Zygopetalum* and *Colax jugosus*. "Pseudo-bulbs ovoid, compressed, 1 to 2 inches long, diphyllous; leaves linear-lanceolate, acute, 6 to 9 inches long; racemes 3 to 5 flowered; flowers 2 inches in diameter; sepals and petals oblong-lanceolate, whitish spotted and marked with brown purple; lip three-lobed, the side lobes

and shorter than in *Colax jugosus*; the leaves narrower, and the racemes shorter and fewer flowered than in *Zygopetalum Mackayi*. Flowers 3 inches across the lateral petals; sepals and petals similar and sub-equal, spreading, broader than in the *Zygopetalum*, narrower than in the *Colax*, light yellow green, much spotted and blotched with brown-purple; lip with two basal auricles, sub-orbicular, the central area white with radiating lines of violet-purple papillæ, the marginal area violet-purple striated; column yellow-green spotted with brown-purple." This was also raised by Mr. Seden.





## AN AMERICAN ROSE BOOK.

MR. H. B. ELLWANGER favours us with a copy of his treatise on the Rose.\* It is a substantial volume of 310 pages, clearly printed on stout paper, very handy, and admirably produced; a re-issue, and though not up to date in varieties is readable, and contains information that is the opposite of a fleeting character. The author says, "This book neither expects nor desires to supersede its predecessors, but asks admission to their fellowship, hoping that it contains enough that is distinctive and of merit to be considered companionable." Most readers of the book will, we think, consider those hopes justified. The introduction to the book is new, and written by the father of the author, Mr. George H. Ellwanger, and from this we make a few citations:—

As producers of new Roses, the French continue in the lead, though an extremely large proportion of recent French varieties are mediocre or useless for general cultivation, or resemble so closely other well-known sorts as to be of no increased value in themselves. The incentive to produce new kinds, it should be remembered, is especially great in France, where 25 francs apiece is demanded for a novelty which may be good, bad, or indifferent, but whose description is invariably *couleur de Rose*. Not that in the majority of cases they are sent out with the deliberate design to deceive—the Rose owes too much to Gallic intelligence, enthusiasm, and pains for a charge of this nature to be made. But to the raiser, a new variety, fostered by his care and travail, naturally possesses enhanced attractions which may not be equally perceptible to the public; while new things are always apt to be more attractive at first sight than upon closer familiarity.

The English, who come next as producers of new Roses, continue to send out some excellent novelties, and, with our own growers, exercise better care and more reliability in selecting than the French. America has contributed largely those kinds suitable for forcing under glass; and of American Roses produced of recent years it may be said they are nearly all valuable as proved by general cultivation.

Among new Roses there has been nothing better produced in their respective classes than Baroness Rothschild and Mme. Gabriel Luizet in pink, La France in silvery rose, Mabel Morrison in white, Maréchal Niel in yellow, Catherine Mermet in delicate bluish, Gloire de Dijon in rose-salmon, Marie Rady in fragrant and vivid vermilion, and Général Jacqueminot in its brilliant scented crimson bud. Other new varieties have been added, to be sure, possessing especial merits. Of distinct sorts recently introduced may be particularly instanced:—*Teas*: Mme. Hoste (Guillot, 1887), Mme. de Watteville (Guillot fils, 1884), Mme. Pierre Guillot (Guillot, 1888), Papa Gontier (Nabonnand, 1883), Queen (Dingee and Conard Co., 1890), Climbing Niphotos (Keynes & Co., 1889), Climbing Perle des Jardins (J. Henderson, 1890). *Hybrid Remontants*: American Beauty (Hon. G. Bancroft, 1885), Earl of Dufferin (A. Dickson & Sons, 1887); Gloire de Margottin (Margottin, 1887), Lady Helen Stuart (A. Dickson & Sons, 1887); Mrs. John Laing (Bennett, 1887). *Hybrid Rugosa*: Mme. G. Bruant (Bruant, 1888). *Bourbon*: Mrs. Degraw (Burgess, 1887). *Hybrid Tea*: Meteor (Bennett, 1887). *Polyantha*: Clothilde Soupert (Soupert & Notting, 1890).

Of the numerous varieties produced since the present volume was written, few possess greater claims to recognition than the Rose raised by the author, and named by him after the distinguished pomologist, Marshall P. Wilder—one of the most fragrant, beautiful, and free flowering of the Hybrid Remontant class, and equalled by few Roses as an autumnal bloomer. By many American Beauty, supposed to be a cross from Mme. Victor Verdier and a Tea of unknown origin, is regarded as the finest of Roses. In its class it is certainly unrivalled, with its immense fragrant blossoms, beautiful violet-red colour, long stems, and luxuriant foliage. But it is essentially a Rose for growing under glass, and cannot take the place of numerous old-time favourites as an out-of-door flower.

So many varieties now exist, however, that growers should exercise redoubled care in sending out anything as a novelty which does not possess intrinsic merits of its own. It may still be reiterated that among the thousands of varieties included in the genus *Rosa* there exist far too many similar colours, and, equally, too many varieties whose colour fades with the first warm sun, though many of the latter class prove more satisfactory when grown in a moist cool climate. There might be an abundant weeding of varieties possessing a purplish-magenta shade, to the decided advantage of both growers and gardens. Too little attention also is paid in the raising of new varieties and in deciding the merits of exhibition Roses, both here and abroad, to one of the most precious virtues of the Rose—fragrance—

. . . . . The coming Rose,  
The very fairest flower, they say, that blows,  
Such scent she hath.

Of Roses for forcing in this country, the following may be mentioned as representative kinds, although in respect to choice of varieties, florists differ somewhat in different localities; while even in the same locality some succeed admirably with certain kinds, where others fail. A large proportion of the following are grown by nearly all leading florists throughout the country:—*Teas*: Bride, Bon Silène, Catherine Mermet, Mme. Cusin, Mme. Hoste, Mme. de Watteville, Niphotos, Papa Gontier, Perle des Jardins,

\* New York: Dodd, Mead, & Co.

Sunset. *Hybrid Teas*: Duchess of Albany, La France, Metcor, Souvenir de Wooton. *Hybrid China*: Magna Charta. *Hybrid Remontant*: American Beauty, Anne de Diesbach, Barcess Rothschild, Général Jacqueminot, Mabel Morrison, Mme. Gabriel Luizet, Mrs. John Laing, Paul Neyron, Ulrich Brunner.

When well grown under glass, few Roses equal Souvenir de la Malmaison for its delicate refined beauty, and the delicious attar-of-rose fragrance exhaled by its flesh-coloured petals—a fragrance observable in a less degree in Caroline de Sansal and some other varieties. Maréchal Niel, in like manner, has no equal in its splendid yellow full-blown flower, and its highly Tea-scented perfume; but it is unfortunately limited to a single lode of gold during the season. With regard to odours, great variety exists among the different kinds—some recalling a luscious fruit in their particular fragrance, others exhaling a spicy aroma, and others still comparable to nothing else but the pure uncloying odour of the Rose itself.

As for out-of-door Roses, who may state the favourites among so many of the fair? Let each one decide their merits for himself; and, revelling in their wealth of beauty as it unfolds with each recurring blossom-tide, repeat with Omar:—

Look to the blowing Rose about us—"Lo,  
Laughing," she says, "into the world I blow,  
At once the silken tassel of my purse  
Tear, and its treasure on the garden throw."

## PROSPECTS OF AND NOTES ON HARDY FRUITS.

IN this locality the hardy fruit crop may be considered fairly safe from the effects of frost, and on the whole is very promising. The recent hot weather, accompanied with dry air, has rendered the bulk of the blossom free from what little frost has been experienced during the last fortnight. Even the latest varieties of Apples may now fairly be looked upon as being safe, as in most instances the petals of late flowering varieties are commencing to fall.

Gooseberries have suffered more than any other kind of fruit. The drought and piercing east winds have not only given the trees in many cases a full crop of red spider, but the young growth has been seriously interfered with; small puny leaves of a pale colour have taken the place of the deep green leathery foliage and vigorous shoots. The trees in many gardens are now in a miserable plight in consequence of this pest. The same results are apparent in market gardens in the neighbourhood. Caterpillars (called by the natives "palivers") are plentiful already. A dose of hellebore powder in the evening, and a vigorous washing with clean water applied with force through the garden engine, will cleanse the trees of this pest. For the defect in growth I have thoroughly soaked the roots of the trees with liquid manure as a flip to growth, and drenched the leaves well with clear water for the red spider.

Red and White Currants are most promising in every way, the hot and dry weather being favourable to the fertilisation of the bloom. Black Currants are fairly promising if the trees keep clear of aphides, which are apt to be troublesome during hot and dry weather.

Strawberries on the whole are promising, although many of the early blooms were spoilt by the sharp frost on the morning of April 11th, and the two successive mornings. In this garden the drought of the last two years, coupled with some severe frost during the winter, have thinned the rows of plants rather, but in the districts more favoured and better suited for Strawberry culture the plants promise remarkably well. All that is required is a thorough soaking rain to cause the fruit to swell quickly and well.

Peaches and Nectarines on south, east, and west walls have set remarkably heavy crops of fruit, the first swelling being apparently quite satisfactory considering the heavy burden of aphids the foliage has to carry. I never saw the trees so infested as they are this year, in spite of repeated applications of insecticides of various kinds. The cold winds experienced a short time since prevented the usual remedies being promptly administered, hence the enemy has progressed rather too rapidly. However, persistent waging of war will rid the trees directly of these pests. As a whole, the trees are not much affected by "blister" this year. Copious supplies of water to the roots close to the wall, and a mulching with half-decayed stable manure, coupled with an early thinning of surplus fruit will do much towards encouraging satisfactory results.

Pears promise a full crop of fruit, both on walls and in the open. At present the trees appear like escaping that wholesale dropping of the fruit in its initiatory stage. The foliage is remarkably free from grubs or insects of any kind.

Plums flowered most abundantly, both on walls and in the open, but they do not promise a heavy crop as yet, many of the tiny fruit appear to lag behind. This I attribute to cold winds at the time when the bloom was fully developed and to drought since. Damsons look rather less promising still; the trees are so heavily attacked with green fly that the fruit cannot swell freely. The bitter east wind which many trees were exposed to while in bloom no doubt interfered with proper fertilisation.

Apples are perhaps the most promising of all; I never saw the trees so profusely flowered as they were in all directions, and what is most remarkable the last year's growth is in innumerable cases wreathed with blossom to the very tips. I do not remember seeing this before. Such varieties as Lane's Prince Albert, Ecklinville, Cox's Orange Pippin, and even Warner's King show this remarkable floriferousness. I do not consider it is an advantage to the trees, rather the reverse, as the current



year's growth must be interfered with to some extent. It shows how well the wood was matured last year while it was being made, thus laying the foundation for the future crop of fruit. I always relieve newly planted bush trees of three-fourths of the bloom buds directly they form, reducing these later on, and in the case of standards I pluck off all. Much better growth is then obtained the first year, and this is of far more importance in the future than a full crop of fruit the first year. An abundance of moisture at the roots, afterwards mulching the surface with manure, will do much towards securing a full crop of good fruit and avoiding that wholesale self-thinning which happens to too great an extent in some seasons.

Cherries are no exception to the rule for a full crop of fruit. On trees on walls the first swelling appears to be quite satisfactory; the foliage, too, is particularly exempt from the usual full crop of black fly so far. Various other kinds of fruit, including Medlars, outdoor Figs, Quinces, and several forms of Crabs, such as the Siberians, and *Pyrus Malus rosea*, both of which are highly prized for their fruit, all promise heavy crops.

All kinds of fruit will give the best return that receive the necessary amount of attention in supplying the roots with moisture when required, and the foliage free from insect pests, which, not only blight the immediate fruit crops, but injure the next season's prospect by interfering with the growth and maturation of the wood.

As showing the difference between two seasons here a standard tree of Apple Worcester Pearmain was fully in bloom last year, May 10th. This tree was in flower April 20th this year.—E. MOLYNEUX, *Swanmore Park, Hants.*

It is early to speak of fruit prospects, but they are sufficiently clear to say that the fruit promise will be falsified. The actual state at the moment is this—Pears, except on walls, a failure; Plums and Damsons promise fairly; Apples are suffering very severely from attacks of weevil, caterpillar, and, worst of all, I think, *Psylla mali*, rendering it impossible to speak definitely at present; Peaches, Nectarines, and Apricots have set a heavy crop.

The Gooseberry caterpillar has stripped many bushes in this part. Currants and Raspberries promise a fair crop. In face of the insect attack and the prolonged drought no opinion is worth much. We find "Stott's Killmright" kills most of our enemies if carefully applied at proper strengths, but as the various eggs continue to hatch out, it is necessary to repeat the sprayings. The season is one month earlier than last year.—S. T. WRIGHT, *Glewston Court Gardens, Ross.*

EVERYWHERE on the Vale of Clyde the fruit prospects are most promising, and with the absence of frost in May point to glutted markets, and possibly low prices, especially with those who have made no provision with an alternative to preserve the fruit. It is not yet too late for that. Evaporators, boilers, and other accessories can be had at a reasonable price, and those who "go in" for these in time will not regret it.—W. T.

TAKING the Pear crop as a whole, I have here a most excellent show of fruit. The older trees are the shyest—I mean the trees from eighty to a hundred years old—in the orchard. Windsor and Catillac are sparsely set, whilst a younger tree by fifty years of Beurré Hardy which is usually shy, in the same orchard, is well flowered and set. Maréchal de Cour, which is also shy as a bearer in the orchard, is fairly well set this year. Jargonelles are well set, and especially so Beurré d'Amanlis. Louise Bonne de Jersey and Pitmaston Duchess (here fruiting most prolifically as a tree in the open), Doyenné du Comice, and Beurré Superfin, usually shy, are fairly well set this season. Williams' Bon Chrétien and its ally Souvenir du Congrès are generally good, and are so this year. My favourite midseason Pear, Fondante du Charneuses, has a fine crop well set.

Fondante d'Automne and Winter Nelis, not ordinarily constant fruiters, are full and setting well. Joséphine de Malines is the barest of flower of all my Pears this year, as Baronne de Mello is the fullest, being one sheet of bloom a week past, and now setting well; Beurré d'Anjou was white over with flowers, but the set of fruit is only indifferent; Triomphe de Jodoigne looks like giving some good fruit; Doyenné Boussouch and Beurré Hardy, grown grafted three years ago on a nameless and worthless stock, are well set all over; Beurré Diel is an average set; Clapp's Favourite is well set, and also its near growing neighbour Rivers' Fertility, well named as to quantity, but not proved, so far, up to dessert fruit quality. These Pear remarks apply to trees and bushes in the open.

My wall Pears are not quite up to average produce this year. Marie Louise has a few, Easter Beurré a few, Beurré Diel scarcely any, Brown Beurré the same, Maréchal de Cour well set, but Nec Plus Meuris, which usually I can rely upon for a crop, is almost bare this season.—P. H. N.

#### POCKET-BOOK NOTES.

I AM full of sympathy with "W. P. W." in his opening to his valuable "Notes by the Way" in last week's *Journal of Horticulture*. No doubt many gardeners' notebooks are crammed full of really useful practical notes which would be of immense service to their brethren were they only printed. I am, however, rather of opinion that those notes do not get into print just in the same way that many proposed and thought-out kindly letters to friends do not get into fact by

reason of the supposed necessity of, and unreadiness of, the orthodox means of letter writing, pens and ink. As we get on in life the practical duties of the daily round so exhaust us that in the evening, and even through the rest periods of the day, we find the armchair and the daily or gardening paper, or monthly, a book with perhaps the pipe of peace more to our comfort than the going to the desk, getting out paper, pens, and ink, and deliberately beginning to write either letter or gardening note. We, therefore, put off the writing, and the habit of putting off grows like other habits, until at last the getting out of these writing materials becomes—except to professional writers, of course—a nuisance.

Now the editorial instructions to correspondents being emphatic that communications shall be written in ink and on one side of the paper, &c., bars many a good note from getting into their hands, as also the generally accepted idea that letters must be written in ink, though not on one side of the paper, hinders many a kindly letter from being written and sent. I think it would be a good thing if we could break down this rule, and as far as I am myself concerned with respect to letter writing generally to intimate friends and own relatives, I scarcely ever use pen and ink. I find the 6d. reporting books (Fono series, No. 5) admirable for my purpose. The leaves are so fixed in them that they draw out at the end without tearing. (These notes are written on such pages.) With this book and a Winsor and Newton or Rowney's B B pencil I can sit down in the garden at an odd five minutes and jot off a letter to a friend without any trouble, and I can testify that many letters to friends do get so written that would not be written if they waited for pen and ink. I specially mention a B B pencil. It makes a good black mark, not too soft or loose to rub out without that everlasting putting to the lips to moisten, which is inevitable with the commonly used H B. Indeed, no gardener ought to use a H B unless for drawing purposes. A "B B" is also best for writing on wooden labels with. My contention, therefore, from all this is, that if editors would relax their rules it would be good for many a busy practical man with a plethoric notebook and good resolutions like "W. P. W." and we, the readers of the *Journal of Horticulture* and other gardening papers would benefit in consequence. Can it be done?—P. H. N.

[If all our correspondents could use the pencil as "P. H. N." has done we should not trouble about ink; but some pencillings are so obscure when they reach us that they could only be hurtful to the eyes of compositors, who in dull and foggy weather have to work the whole day under gas jets; but there is an important practical reason for requiring matter for press to be written only on side of the paper, and we cannot relax that rule. Send us some more well pencilled leaves from your pocket book, Mr. "P. H. N." You can do them when sitting on a flower pot under a tree in hot weather, in the potting shed when it rains, and others may do likewise who use B.B. pencils on white paper, the same as we are now using. Many a bright idea and good suggestion is lost to the world by want of recording them first in a pocket book, then in the press].

#### GRAFTING: DOES THE WOOD OF THE STOCK AND SCION UNITE?

REFERRING to this matter on page 343, I may say that a similar question was asked me when giving an illustrated lecture on grafting fruit trees at Inkberrow, under the Worcestershire Technical Education Committee of the County Council, some weeks ago. At first I was quite under the impression that the woods united, and made a firm and lasting solid growth; but on the matter being discussed by the questioner, on second thoughts, which are sometimes best, I felt quite inclined to alter my opinion, especially on some of the principles of inserting grafts, of which I showed about half a dozen of the best. I consider that splice grafting on a small stock, with same size of graft, would be the best test.—J. HAM.

To disprove that the stock and scion unite I have had many an argument, and even when I produced evidence of cut timber, both where grafted or where the bark and wood had covered a lopped-off branch, the disputants would declare there was something wrong, as the wood of the stock and that of the scion did unite. I have cut hundreds of such specimens, and never yet failed to see the dark coloured portions of the ununited wood, so can corroborate all you say on the subject.—W. T.

I FIND it very difficult to believe that no real junction of the hard or heart wood of trees takes place after the process of grafting. Budded trees are of course very different, but there must be myriads of old trees about the country which have grafted heads, and it seems incredible, assuming no real junction of the heart wood has taken place, that they should withstand rough winds and not snap off at the junction. Is it not the case that trees thus worked, if they do not really unite, the wood yet secretes a sappy compound which fills the interstice formed by the grafting, and acts very much as glue does to dead wood by holding the sections tight together?

The section of tree figured at page 343 is a somewhat unusual one for a grafted tree to show, because as a rule the graft exceeds the stock in dimensions, whilst in the illustration the case is so much reversed that the stock is double the size of the graft. That would rather tend to show that the grafting was at the first badly done, or else that the stock and graft were badly assorted. Still, grafting as ordinarily done when stocks are young, and of course if such non-union exists it would



apply solely to such portion of the stock and graft as was originally worked, whilst all new wood made later would, of course, enclose or cover up the interstice.

The chief interest in relation to this matter is found in the re-grafting of old fruit trees or similar stocks so much advised, and here as the wood surfaces are brought together longitudinally rather than transversely I am disposed to think that a real union does result. The matter is well worthy of further elucidation.—A. D.

## ROYAL HORTICULTURAL SOCIETY.

MAY 9TH.

THE Drill Hall on this occasion presented a gay appearance, the building being well filled with miscellaneous plants and flowers. Orchids were fairly well shown, and stove, greenhouse, and hardy plants were well represented. A few fruits and vegetables were staged.

FRUIT COMMITTEE.—Present: Phillip Crowley, Esq. (in the chair); and Rev. W. Wilks, Dr. Hogg, with Messrs. T. F. Rivers, John Lee, Harrison Weir, G. Bunyard, G. Taber, T. J. Saltmarsh, G. T. Miles, A. Dean, A. J. Laing, W. Bates, G. Sage, G. Wythes, J. Hudson, G. Reynolds, F. Q. Lane, J. Smith, H. Balderson, and J. Wright.

Mr. E. Gilman, The Gardens, Ingestre, Stafford, sent seedling Melons from Ingestre Hybrid  $\times$  Hero of Lockinge  $\times$  Countess. One of them, a medium-sized fruit, yellow rind, netted, greenish-white flesh, sweet and juicy, was granted an award of merit. Mr. Riches, gardener to Dr. Frankland, Redhill, sent a new green-fleshed Melon, handsome, but decidedly unripe, and the Committee desired to see the variety again as one of promise.

Mr. W. Iggulden, Marston Gardens, Frome, sent ripe fruits of Noble Strawberry gathered from the open ground, the plants having been protected with mats when in flower. The fruits were very good, but paler and more pointed than usual. They were ripe exactly a month earlier than the first fruits of last year of the same variety on the same border (vote of thanks).

A cultural commendation was unanimously awarded to Mr. G. Wythes for splendid fruits of Brown Turkey Fig; also a vote of thanks for fine clusters of the Old Red Tomato.

Mr. Leach, Albury Park Gardens, sent a dish of Chelsea Gem Peas, planted January, 1893, from seed sown in December. Mr. Leach also sent plants bearing a heavy crop of Runner Beans, grown in a Peach house. The variety is one of Messrs. Sutton's, and named "Delicious." The pods resemble those of Dwarf Kidney Beans (but larger) rather than Scarlet Runners, and are said to be of the highest quality. The crop was certainly bountiful. Very good Lettuces—Tennis Ball, Leach's Winter Cos and Brown Cos were sent from the same garden, the Winter Cos turning in like a summer Lettuce. A vote of thanks was accorded to Mr. Leach for his exhibits. Mr. T. W. Bond, gardener to C. L. N. Ingram, Esq., Elstead House, Godalming, sent neat conical heads of Veitch's Earliest of All Cabbage, from seed sown on a gentle hotbed January 22nd (vote of thanks).

Mr. E. Beckett sent from Aldenham Park Gardens splendid examples of Snowdrop Potato, handsome fruits of Reading Perfection Tomato, and an excellent dish of British Queen Strawberries, the finest specimens of the respective kinds placed before the Committee this year, and a cultural commendation was promptly accorded.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair), Messrs. J. Fraser, Owen Thomas, H. Herbst, C. F. Bause, G. Stevens, H. B. May, C. T. Druery, J. Jennings, W. C. Leach, G. Nicholson, T. W. Girdlestone, Geo. Gordon, Peter Barr, H. Cannell, C. E. Shea, Jas. Walker, Chas. Noble, C. E. Pearson, Hy. Turner, Thos. Baines, Geo. Paul, R. Dean, Ed. Mawley, J. D. Pawle, and the Rev. H. H. D'Ombrian.

Messrs. Jas. Veitch & Sons, Royal Exotic Nursery, Chelsea, exhibited a group of miscellaneous hardy flowering and foliage plants. Amongst the most striking plants in this collection were Rhododendron Rosalie Seidel, some very fine Azaleas, Cytisus scoparius Andreanus, Cercis siliquastrum, Chionanthus retusum, Spiraea confusa, Viburnum plicatum (first-class certificate, see below), Acer palmatum sanguineum, A. p. dissectum, and Lilium longiflorum Harrisii (silver-gilt Flora medal). The same firm also staged a pan of Tillandsia (Vriesia) Leodiensis, for which they were accorded a first-class certificate (see below). For a plant of Phyllocactus Plato an award of merit was awarded (see below). For flowers of Magnolia hypoleuca they were also accorded a first-class certificate (see below). Mr. Perry, gardener to J. C. Tasker, Esq., Middleton Hall, Brentwood, showed a grand collection of Cannas, amongst which such varieties as Paul Bruant, Admiral Courbet, François Corbin, Victor Hugo, F. Benary, Madame Crozy, and Louis Thibaut were particularly prominent (silver Banksian medal). A group of Roses exhibited by Messrs. Paul & Son, Waltham Cross, was one of the features of the Show. The collection included some varieties of recent introduction, such as Clio, Spenser, Crimson Queen, and Zenobia. From the same firm came two boxes of cut Roses, containing some beautiful flowers, notably Salamander, Jean Ducher, Ulrich Brunner fils, Beauty of Waltham, Danmark, Madame Hoste, Grand Mogul, Merveille de Lyon, Medea, Garden Favourite, and Madame Montet (silver-gilt Flora medal).

A group of miscellaneous plants was staged by Messrs. E. D. Shuttleworth & Co., Albert Nurseries, Peckham Rye, which included finely grown examples of Lilium longiflorum Harrisii, Lælia purpurata, Cypripedium barbatum, C. Lawrenceanum, Dracæna Lindenii, Caladiums, and

Coleuses in variety (silver Banksian medal). The same firm also staged a collection of alpine and hardy plants, including Auriculas, Lupinus, Pyrethrums, Narcissi, and Pansies (bronze Banksian medal). From Messrs. Wm. Cutbush & Son came a group of miscellaneous plants, prominent amongst which were Leschenaultia biloba major, Saxifraga pyramidalis, Dracæna superba, Erica Spenceri, E. rosea, E. candidissima, Croton Emile Chantrier, Caladium Charlemagne, Cytisus scoparius Andreanus, and Erica Cavendishi (silver Flora medal). Mr. Chas. Turner, Royal Nurseries, Slough, sent examples of his new Polyantha Rose "Turner's Crimson Rambler"—previously certificated—a grand variety, profuse in flowering and strong in growth; an acquisition to this class of Roses (vote of thanks). Mr. Geo. Mount, Exotic and Rose Nurseries, Canterbury, sent two boxes of cut Roses, in which were very beautiful blooms of Catherine Mcmet, La France, Ethel Brownlow, The Bride, Baroness Rothschild, Duke of Edinburgh, Jean Ducher, Thomas Mills, Mrs. John Laing, and Ulrich Brunner (bronze Banksian medal). Messrs. Geo. Paul & Son, The Old Nurseries, Cheshunt, exhibited a charming collection of Rhododendrons and Azaleas. In this exhibit R. Broughtoni, R. Purity, R. Beauty of Cheshunt, R. Sir R. Peel, and R. Duke of Cambridge were particularly striking. A new sweet-scented hybrid variety, the result of a cross between Fortunei and Mrs. C. Butler, named High Beech Hybrid, was very good. The Azaleas were finely represented by Chevalier A. de Reali, Raphael de Smet, Isabella van Houtte, and Comte de Gomer (silver Banksian medal). For a plant of Canna Sophie Buchner the same firm was accorded an award of merit (see below). H. J. Elwes, Esq., Colesbourne, Gloucestershire, staged charming examples of Calochorti (Cyclobothra) in variety. A first-class certificate was awarded for C. amoena (?). This is described elsewhere.

Two boxes of cut Roses were exhibited by Mr. Frank Cant of Colchester. The blooms were magnificent, and included excellent examples of such varieties as Ethel Brownlow, Innocente Pirola, Waban, Ernest Metz, Madame Scipion Cochet, and The Bride (silver Banksian medal). Begonias in varieties were shown by Messrs. Henry Cannell & Son, Swanley. Hector, a double, was accorded an award of merit (see below), as also did R. B. Parsons. A single scarlet bloom was very striking, measuring fully 6 inches across. Mr. W. Gilbert, 1, Albert Terrace, Bishops Waltham, staged charming flowers of Aquilegia Perle Blanche, which were very fine. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, showed a box of border Carnation Pride of Great Britain. Mr. J. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, sent a plant of Hippeastrum Solandraeflorum, which was accorded a vote of thanks. Mr. M. Webster, gardener to A. W. Kirby, Esq., M.D., Kelsey Park, Beckenham, staged a grand group of Myosotis in flower (vote of thanks).

Messrs. P. Barr & Son, King Street, Covent Garden, staged a magnificent collection of flowers (silver Flora medal), including some very fine Pæonies, Irises, Gladioli, Spiræas, Parrot and florists' Tulips, and Pyrethrums. In the boxes of florists' Tulips the following varieties were particularly striking:—Aglaiæ, rose, flamed; Annie Macgregor, rose, breeder; Masterpiece, bizarre, feathered; Modesty, rose, feathered; Mrs. Jackson, byblœmen, flamed; Lord Denman, byblœmen; Dr. Hardy, bizarre; Phillip I., byblœmen, breeder; and Lord Derby, rose, breeder (silver Flora medal). Some plants of Rhododendron Helene Schiffner were exhibited by Mr. J. T. Seidel, Handelsgärtner, Steisen bei Dresden (first-class certificate, see "Awards"). Messrs. F. Sander & Co., St. Albans, sent the new plant Dracæna Sanderiana, and for which a first-class certificate was awarded. M.M. Linden, Brussels, also exhibited a plant, apparently the same as D. Sanderiana, as D. Thalioides var. foliis variegatis, a first-class certificate being likewise awarded in this case. Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, were accorded a first-class certificate for a plant of Bilbergia sanguinea (see "Certificates and Awards").

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair), and Messrs. De B. Crawshay, H. M. Polle, Hugh Low, H. Ballantine, T. W. Bond, T. Statter, C. Pitcher, J. Jacques, E. Hill, W. H. White, H. Williams, J. Gabriel, C. T. Lucas, J. Douglas, T. B. Haywood, F. Sander, S. Courtauld, J. O'Brien, and A. H. Smee.

Messrs. F. Sander & Co., St. Albans, sent a group of Orchids, comprising some choice species and varieties. Among these the beautiful Sobralia macrantha, Aërides Savagena, Odontoglossum Andersonianum hemileucum, O. luteo-purpureum, O. hastilabium, Lælia elegans, Oncidium Roraimensis, Cypripedium Victoriae Mariæ, C. selligerum majus, and C. Curtisii. Messrs. Pitcher & Manda, Hextable, Swanley, Kent, staged a large collection of Cattleyas, Lælias, Cypripediums, and Odontoglossums, the whole making a charming effect. Lælia purpurata, Cattleya Mossiæ, C. Gravesiana (C. speciosissima  $\times$  C. Mossiæ), and Cypripedium Schrödera were specially good in this contribution (silver Banksian medal). Messrs. Hugh Low & Co., Clapton, sent Lælia purpurata Lowiana, a grand form (award of merit). Major-General Emeric S. Berkeley, Bitterne, Southampton, sent Dendrobium sulcatum, D. transparens albanum, D. hercoglossum, and Galeandra sp. Mr. Charles Richman, Springfield, Trowbridge, staged a new hybrid Cypripedium named "Chas. Richman." This is a cross between C. bellatulum and barbatum, and the seed was sown in 1889 (award of merit). T. Statter, Esq., Stand Hall, Manchester, staged Dendrobium Bensoniæ album (first-class certificate). E. R. Brooman White, Esq., Arddarock, Garelochhead, Dumbartonshire, sent a variety of Cypripedium concolor. A spray of Bifrenaria bicornis came from the Royal Botanic Gardens, Glasnevin; and C. L. N. Ingram, Esq., Godalming, Surrey (gardener, Mr. T. W. Bond) sent Cypripedium striata, a very pretty species.



Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, sent a plant of *Lælio-Cattleya Hippolyte* (*Lælia cinnabarina* × *Cattleya Mossiæ*) and various other plants, which are mentioned elsewhere. An award of merit was adjudged for *Odontoglossum crispum* "De Barri Crawshay," which was shown by De Barri Crawshay, Esq., Rosefield, Sevenoaks, Kent (gardener, Mr. Sydney Cooke). This is described below. Messrs. Charlesworth, Shuttleworth, & Co., Heaton, Bradford, had *Oncidium serratum* and *O. macranthum* Charlesworth var. among other things; and Mr. A. G. Hollington, Forty Hill, Enfield, staged *Cypripedium Evenor grandiflora*. W. F. Darnell, Esq., Devonshire House, Stamford Hill (gardener, Mr. W. Davis), staged a group of Orchids, comprising *Cattleyas*, *Lælias*, and *Odontoglossums*, tastefully arranged with other plants (silver Flora medal). Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, had *Cattleya hybrida* Harold, for which an award of merit was adjudged. This is referred to below.

#### CERTIFICATES AND AWARDS.

*Odontoglossum crispum* De Barri Crawshay (De Barri Crawshay).—This is a very fine variety. The plant exhibited had one spike carrying a dozen large flowers. The sepals and petals are white, tinted rose, with reddish brown blotches; the throat is lemon yellow (award of merit).

*Dendrobium Bensoniæ album* (T. Statter, Esq.).—An exceedingly pretty variety. The sepals and petals are pure white, as also is margin of the lip, the other portion and throat being a rich orange yellow (first-class certificate).

*Cattleya hybrida* Harold (Norman C. Cookson, Esq.).—This is the result of a cross between *Cattleya Gaskelliana* and *C. gigas*, and is a very charming hybrid. The petals and sepals are a rosy mauve colour, the front lobe of the lip being a rich purplish crimson, with a yellow throat (award of merit).

*Dracæna Sanderiana* (F. Sander & Co.).—This is a new species from Africa, and it was stated to have been introduced by Messrs. Sander and Co. through Mr. Johannes Braun. When well grown it is obviously a useful stove plant. It is an erect grower with leaves about 6 or 7 inches in length and 1 to 1½ inch broad. The centre of each leaf is dark green covered with a silvery gloss, the margins being cream coloured. The stems are similarly variegated (first-class certificate).

*Cypripedium Charles Richman* (Mr. C. Richman).—This is a hybrid, the result of a cross between *C. bellatulum* and *C. barbatum*. The dorsal sepal is a dull pink shade, greenish in the centre with dark veins. The petals are similarly coloured, covered with small dark spots. The lip is a dark purplish brown (award of merit).

*Lælia purpurata* Lowiana (Hugh Low & Co.).—A charming variety, with pale rose coloured sepals and petals, and very dark velvety crimson lip (award of merit).

*Dracæna Thalioides* var. *foliis variegatis* (MM. Linden, Brussels).—To all appearance this is the same species as *D. Sanderiana*, described above. A statement shown with the plant read as follows:—"This *Dracæna* was discovered in 1888 by Mr. Braun in the Cameroon (Africa), and sent to the Imperial Botanic Gardens of Berlin. This is the original plant collected by Mr. Braun" (first-class certificate subject to its being correctly named).

*Ulmus Ureedi aurea* (Mr. W. C. Leach).—A rich golden coloured tree, the foliage being of a bright yellow and serrated edges (first-class certificate).

*Magnolia hypoleuca* (James Veitch & Sons).—A pretty species with pure white flowers, which have crimson centres and are fragrant (first-class certificate).

*Tillandsia (Vriesia) Leodiensis* (J. Veitch & Sons).—An attractive plant with dark green foliage and brilliantly coloured spikes, crimson centres, and yellow margins (first-class certificate).

*Phyllocactus Plato* (J. Veitch & Sons).—A remarkably fine seedling, with large bright crimson flowers (award of merit).

*Bilbergia sanguinea* (Charlesworth, Shuttleworth & Co.).—An attractive plant with scarlet bracts and purplish flowers (first-class certificate).

*Begonia R. B. Parsons* (H. Cannell & Sons).—A double variety with well shaped salmon pink flowers. The plant is dwarf and compact in habit (award of merit).

*Begonia Hector* (H. Cannell & Sons).—A fine double variety with bright crimson flowers (award of merit).

*Canna Sophie Buchner* (G. Paul & Son).—A dwarf growing form with robust foliage and large bright crimson flowers (award of merit).

*Viburnum plicatum* (J. Veitch & Sons).—A charming species with white flowers borne in clusters in dense profusion on the branches. A valuable hardy shrub (first-class certificate).

*Rhododendron Helene Schiffner* (J. E. T. Seidel, Dresden).—This is a fine variety with medium-sized pure white flower (first-class certificate).

*Cyclobothra amœna* (H. J. Elwes, Esq.).—An exceedingly pretty flower of a rosy mauve shade, the inside of the petals being covered with hair-like filaments. Three dark blotches are noticeable in the centre of each flower (first-class certificate).

*Melon Ingestre Hybrid* (Mr. E. Gilman).—A greenish white fleshed Melon of good flavour. A cross between Hero of Lockinge and Countess (award of merit).

#### THE LECTURE.

At the usual afternoon meeting at the Drill Hall on Tuesday Professor Cheshire delivered a lecture on "How to Solve Chemical Questions Concerning the Soil without the Aid of Chemistry." Mr. G. Paul occupied the chair, and there was a fair attendance.

The object of the lecture was, as the Professor said in his lengthened

introductory remarks, to teach every gardener, whether amateur or professional, what food is wanting from his soil in order that he may add it in the form of a chemical manure. It must have fallen somewhat wide of the mark, however, as the subject is far too large to allow of anything but the most rudimentary principles being acquired from such a discourse as this.

Lengthy references were made to the effect produced by leguminous plants on the soil, and of what material benefit the nitrogen introduced by this class of plants was to the crop next succeeding it. The value of farmyard manure as a food for plants was referred to, and compared to the advantages of using chemical manures, and while acknowledging the undoubted value of the former the lecturer strongly advocated the more extended use of the latter. The discourse was illustrated in a



FIG. 70.—BURCHELLIA CAPENSIS.

simple manner with the aid of a blackboard and some roots of plants in glass jars.

A few questions were put to the lecturer and answered by him. A vote of thanks was accorded to Professor Cheshire for his lecture, and to Mr. Geo. Paul for occupying the chair.

#### BURCHELLIA CAPENSIS.

THOUGH one of the oldest Cape plants grown, *Burchellia capensis* must be classed amongst those that are neglected, for it is comparatively seldom seen in modern gardens. In a few establishments it is still a favourite, and we recently saw some plants of this *Burchellia* that were remarkably beautiful, bearing numerous heads of its brilliant scarlet tubular flowers. It can be grown in a greenhouse, but it is much more satisfactory in an intermediate temperature, a warm conservatory, or the cool end of a stove, as it grows more freely and flowers more abundantly than in a cold house. A compost of light turfy loam and peat with good drainage meets its requirements; and when growing frequent syringing is beneficial. Under ordinary treatment the plants flower in the spring, when their bright blossoms and fresh green foliage have a most pleasing appearance.

#### RHYNCHOSPERMUM (TRACHELOSPERMUM) JASMINOIDES.

THIS is a most useful ornamental climbing plant for the greenhouse or conservatory, and I think a few remarks respecting its culture and general management may probably be of interest to some of your



readers. The charming white flowers are freely produced from the axils of the leaves along the entire length of the young growth and hanging gracefully in loose axillary or terminal cymes are then most effective. The blooms are also very fragrant, filling the house in which they are grown with a delightful perfume.

*Rhynchospermum jasminoides* is admirably adapted for a variety of positions under glass, but I think by far the best effect is produced when grown as a pyramid. One of the chief features respecting the culture of this charming plant is not to subject it to too severe training; indeed, I find the best results are obtained by allowing the young growths to assume a loose condition, as by so doing a much more graceful and pleasing effect is produced. After the plants have finished flowering, enough of the strongest growths should be tied in to make the plants of an even appearance, all superfluous branches being removed, as nothing is gained by overcrowding.

A compost of good fibry loam and peat in equal proportions, with a little sharp sand, will form an excellent mixture for the plant. Liquid farmyard manure, or one of the numerous chemical fertilisers, if applied two or three times a week will prove very beneficial to them during the growing season. Brown scale is particularly troublesome on these plants, but if syringed, say once a week, with petroleum in proportion of a wineglass to three gallons of water, the pest is easily kept in check. —GEORGE PARRANT, *Ashby Lodge Gardens, Rugby.*

## NATIONAL AURICULA SOCIETY.

(NORTHERN SECTION).

THE annual Exhibition of the Northern Section of the National Auricula Society was held in Town Hall, Manchester, recently, and despite the exceptionally early season the Show was a very good one, some well-grown flowers being staged. Mr. T. Lord exhibited the premier Auricula, a fine specimen of Rev. F. D. Horner, a splendid green-edged variety. Miss Woodhead, Messrs. W. H. Midgley, Irving Hind, T. Lord, J. Beswick, and J. Clements secured most of the prizes for Auriculas, and Messrs. G. Thornley, S. Barlow, and J. Beswick for Polyanthuses. Appended are the names of the leading prizewinners and the varieties they exhibited.

In the class for six dissimilar Auriculas (Alpines excluded), Mr. Irving Hind, Halifax, was first with Mrs. Dodwell, Mrs. Potts, Lancashire Hero, Talisman, Acme, and Geo. Lightbody. Mr. Tom Lord, Todmorden, second with Rev. F. D. Horner, Mrs. Potts, Mrs. Dodwell, Geo. Lightbody, Lancashire Hero, and Acme. Mr. W. H. Midgley, Halifax, third with Mrs. Potts, John Simonite, Mrs. Dodwell, Rev. F. D. Horner, Meiklejohn, Geo. Lightbody. Miss Woodhead, of Halifax, fourth. Mr. Geo. Middleton, Prestwich, fifth. Mr. J. Stokes, sixth; and Mr. J. Clements seventh. For four dissimilar Auriculas Mr. Tom Lord was first with Mrs. Potts, Rev. F. D. Horner, Mrs. Dodwell, and Geo. Lightbody. Mr. Irving Hind second with Mrs. Potts, Lancashire Hero, Rev. F. D. Horner, and Acme. Mr. W. H. Midgley third, Miss Woodhead fourth, Mr. Thos. Buckley fifth, Mr. G. Middleton sixth, and Mr. J. Clements seventh. Mr. Simonite was first for a pair of dissimilar Auriculas with Ivanhoe and a seedling. Mr. E. Shaw second with Mrs. Dodwell and Wm. Brocklebank, followed by Messrs. S. Barlow, J. Dickin, and J. Stelfox.

The single classes were fairly represented. Mr. B. Simonite was first for a single green edge with Dr. Hardy, Miss Woodhead second with Talisman, Mr. T. Lord third with Rev. F. D. Horner, Mr. Irving Hind fourth with Prince of Grecns, Mr. B. Simonite fifth with a seedling, and Mr. J. Stelfox sixth, also with a seedling. Mr. T. Lord came first for single plants of a grey edged variety with G. Lightbody, Mr. W. H. Midgley second with A. Meiklejohn, Mr. Irving Hind third with Lancashire Hero. Mr. W. H. Midgley was first with Traill's Beauty in the white edged forms, Mr. Irving Hind second with Mrs. Dodwell, Mr. W. H. Midgley third with Acme; and Mr. Tom Lord fourth with Smiling Beauty. Mr. Irving Hind took premier honours with Mrs. Potts in the class for single plants of selfs, Mr. B. Simonite being second with Raven, third with Miriam, fourth with Melaney, fifth with Dazzle, and sixth with Viola.

In the class for four dissimilar Alpine Auriculas, Mr. J. Beswick was first with Nellie, John Allen, Mrs. Beswick, and Mr. Durnford. Mr. J. Stokes second with Albion, Edith, Mrs. Ball, and Unique. Messrs. S. Barlow, H. Geggie, J. Clements, J. Stelfox, and George Thornley securing positions in order of their names. In the class for single specimens of yellow centred Alpines Mr. J. Beswick won first, second, and third prizes. In class for shaded Alpines with white centres, Mr. J. Clements was first with Exonia. Mr. J. Beswick was second with Mrs. Beswick, and third with The Bride; followed by Mr. H. Geggie with seedling varieties.

For three dissimilar Polyanthuses (black grounds), Mr. Geo. Thornley, Middleton, gained first prize, the varieties being Mrs. Holden, Mrs. Brownhill, and a seedling; Mr. J. Beswick was second with Lancashire Hero, Exile, and Mrs. Brownhill; Mr. S. Barlow third, and Mr. J. Stokes fourth. Mr. Geo. Thornley was again first for three Polyanthuses (red grounds), showing Lancer, Middleton Favourite, and George IV.; Mr. J. Beswick second, Mr. S. Barlow third. Mr. Thornley was also first for a single specimen red ground Polyanthus with Middleton Favourite, and second with Lancer; and Mr. S. Barlow third with Prince Regent. For single plants of black ground Polyanthuses Mr. Geo. Thornley led with Mrs. Brownhill, and second with a seedling; Mr. J. Beswick third with Exile; Mr. Thornley fourth with Cheshire Favourite; Mr. Beswick fifth with Lancashire Hero; Mr. S. Barlow sixth with John Bright;

and Mr. G. Thornley seventh with Mrs. Holden. For twelve dissimilar fancy Polyanthuses, Mr. S. Barlow was also first, and Miss Hopkins of Knutsford second.

Mr. Barlow was awarded a first-class certificate for a seedling Alpine Auricula, Miss Lloyd, a charming variety.



## FRUIT FORCING.

**Vines.**—*Houses of Ripe Grapes.*—Vines started in December will now have ripe Grapes. The temperature should be lower, but sufficient fire heat will be necessary to prevent its falling below 60°, and allow a free circulation of air. Sufficient moisture, however, must be present in the atmosphere to prevent injury to the foliage from drought or the spread of insects. Examine the borders, and if sufficiently moist let them be covered with a little short litter to prevent evaporation and keep the soil from cracking. Vines carrying ripe Grapes in June and July require more water than they do in the autumn. If water is necessary afford it in the early part of a fine day, keeping the soil healthfully moist. Allow a moderate extension of the laterals, which will keep the roots active, and prevent the foliage ripening prematurely. Shading will be necessary to assist the Grapes retaining their colour longer, as ripe Hamburgs lose colour when exposed to the direct rays of the sun for some time, which must be prevented by placing a double thickness of herring nets over the roof lights.

*Houses Started at the New Year.*—The Grapes will now be advanced in colouring, and require a free circulation of air. Moderate atmospheric moisture will still be necessary for the benefit of the foliage, and it will not injure the Grapes, provided it is not stagnant and deposited upon them. A little air and gentle warmth in the hot-water pipes will keep the atmosphere in motion and prevent moisture being deposited on the berries. The borders must not be neglected for water, but when needful afford a supply to keep the soil in a moist condition. Allow the laterals to extend where there is space, as a good spread of foliage aids the retention of the colour in black Grapes. Where red spider has obtained a hold prompt measures must be adopted for its destruction. Sponging the leaves is a safe and efficacious means of preventing the spread of the insects. Sulphuring the pipes sometimes proves worse than the pests, as an excessive dose prejudicially affects the skins of the Grapes, but a judicious application of sulphur, mixed with skim milk, to the hot-water pipes, heated to 170°, on a calm evening, and with the house closed, destroys red spider without damage to the Grapes. The heat should be maintained about an hour, and then it may be allowed to fall to the ordinary temperature. Where fermenting material on outside borders has become cold and wet a portion of it must be removed, leaving enough for a light mulch.

*Early Muscats.*—Those started in December to ripen early in June are just beginning to colour. They require a moist condition of the soil, as the berries are liable to shrivel unless the Vines are kept well supplied with water at the roots. When beginning to colour Muscat of Alexandria is liable to be scorched, for which a slight shading of herring netting doubled is a good preventive, but early ventilation and a circulation of warm air must be attended to. This will cause the Grapes to be a little later in ripening, but well-ripened Muscat of Alexandria cannot be had before the middle of June. Black Muscat and Madresfield Court may be had much earlier and with less heat than is required for Muscat of Alexandria.

*Succession Houses.*—Disbudding, stopping, tying, and regulating the growths must be followed up, making the most of the space at command for a good spread of foliage fully exposed to light. Allow crops proportionate to the vigour of the Vines, removing surplus bunches before they come into flower. Examine the borders occasionally, and when dry afford a thorough supply of water. Vines in full foliage and carrying heavy crops of fruit should be assisted with surface dressings or liquid manure. Inside borders will take almost any quantity of water, provided they are well drained, when the Vines are swelling their crops. Outside borders in this exceptionally dry season, and where high and dry, will require a copious supply of water or liquid manure. Ventilate early; it causes accumulated moisture to disperse, gives texture to the foliage, and solidity to the wood. Allow a high day temperature from sun heat, closing early to store the sun-warmed atmosphere. A temperature of 60° to 65° at night is best, especially to Vines carrying heavy crops, which require more time than those but lightly cropped, and maintain a day temperature of 70° to 75° in dull weather with a little ventilation.

*Grapes Stoning.*—This process requires time and a steady temperature, 60° to 65° at night being sufficient, and 5° to 10° rise by day artificially. The borders must be kept well supplied with moisture, but excessive supplies of water and feeding substances check root-action and induce shanking. Keep the pinching of the laterals well in hand, avoiding checks, either by large reductions of foliage, cold currents, or water supplied at a low temperature. When the stoning is completed feed liberally, maintain a good moisture in the house, and mulch the



border lightly. Afford a gentle circulation of air constantly, increase it early in the morning with advancing sun, and reduce correspondingly with the declining sun heat, closing sufficiently early to retain a good heat.

**Late Houses.**—Attend to stopping and tying, laying in laterals as the space admits without crowding. Thin out the berries liberally, reserving the best set and most compact bunches for the crop, as these finish better than large loose ones. Top-dress the borders according to the vigour of the Vines. If young and strong they may only need a light mulching, or if the soil is light cowdung will be found more beneficial than stable manure. In some cases the late Vines will only be in flower. Lady Downe's, Mrs. Pince, Black Muscat, Alnwick Seedling, and other shy setters should be cross-fertilised, using pollen from Ham-burghs and Alicante, operating on fine days.

**Cucumbers.**—Be careful that the plants do not suffer through insufficient supplies of water, always applying it at the same temperature as that of the bed. Plants in bearing all the winter will now be showing signs of exhaustion, and had better be removed and their places filled with young plants without delay. Assist young plants which show signs of weakness by removing the male flowers and the first fruits, stopping at every third or fourth joint, removing all weakly and superfluous growths. Shading will be necessary for an hour or two in the middle of the day when the sun is hot, especially houses facing south, but shade only to prevent flagging. Little fire heat will be required by day, shutting the valves at about 8 A.M. and opening them again at about 4 P.M. or later. Maintain a good moisture by damping the floors two or three times a day. If aphides appear fumigate on a calm evening and repeat early the following morning, leaving the foliage dry but the floors well damped, especially when there is white fly. That pest and red spider are best cradicated by removing the worst infested leaves and brushing the hot-water pipes when hot with a thin wash of sulphur and skim milk. Keeping the evaporation troughs charged with liquid manure or sprinkling the floors in the evening with it is beneficial.

Sow seeds for raising plants to occupy pits and frames as they become cleared of forced vegetables and bedding plants. A moderate bottom heat may be secured by using the less decomposed material from Seakale, Vine borders, or spent hotbeds, which, with about a fourth of fresh material, will afford all the bottom heat now required. Attend to renewing the linings, and still employ good night coverings. Close early in the afternoon, and so as to run the temperature up to 90° to 100°.

**Melons.**—Train the shoots thinly, never permitting them to become crowded. Keep the atmosphere dry and well ventilated when the fruit is setting, and fertilise the flowers, so as to have three to half a dozen fruits of about an equal stage of swelling on a plant, being careful not to allow one fruit to take the lead. Stop the shoots one joint beyond the fruit. Place supports to fruits becoming heavy to relieve the vine of the weight. Attend to stopping the laterals after the fruits are swelling, maintaining a good moisture by syringing the walls as well as the foliage at about 3.30 P.M., and damp the floors in the morning and evening, or oftener in hot weather. Water or liquid manure will be required about twice a week. Maintain a night temperature of 70°, 75° by day from fire heat, and 85° to 90° with sun. Ventilate early and freely, but avoid admitting too much at a time with a view to lower the temperature, commencing to ventilate at 75°, and increase or diminish it according to external influences. When the fruit commences to ripen gradually reduce the supply of water at the roots, but not so as to cause the foliage to flag, and afford a circulation of warm rather dry air, the temperature being maintained at 70° to 75° by artificial means, and 80° or 90° with sun heat. Cut the fruits before they are dead ripe, and keep them until in good condition—evenly ripe all over—before sending to table. Cracked fruits arise from various causes—generally by a deficiency of water when swelling, and a close atmosphere, with too much water at the roots when ripening. The remedy is to diminish the supply of water to the roots, admit air constantly, and cut the shoots about half-way through with a knife a few inches below the fruit.

Encourage plants swelling their fruits by syringing freely in hot weather at closing time, damping the floors when they become dry, and sprinkle them in the evening with clear liquid manure, say 1 lb. of guano to 20 gallons of water. Ventilate freely in favourable weather, commencing from 75° to 80°, increasing or decreasing it according to external influences, maintaining a day temperature of 80° to 90° with sun heat, and closing between 80° and 85°, always so as to run up 10° or more, which will increase the size of the fruits and lessen the necessity for fire heat at night, but it must be accompanied by plenty of atmospheric moisture. If thrips appear fumigate moderately on two or three consecutive evenings, and repeat in a week afterwards. Red spider may be kept under by syringing, or coat the hot-water pipes lightly with flowers of sulphur. If canker appear rub quicklime well into the affected parts and repeat as necessary.

**Pits and Frames.**—Train out the growths, keeping them rather thin. Attend to setting the blossoms in bright weather, and pinch off the points of the shoots at the same time one joint beyond the fruit. If there is any difficulty in getting the fruit to set, apply a good lining to the bed, and admit a little air constantly, withholding water. Shade only to prevent flagging. Plants swelling their fruits should be well earthed, the laterals pinched and thinned out, and the fruits raised on pieces of slate on inverted flower pots. Sow seed to raise plants for planting in frames after they become cleared of bedding plants, potting the young plants when they show the second leaves, and take out their points at the second rough leaf.

## THE KITCHEN GARDEN.

**Runner Beans.**—If a good sowing is made now the seed should germinate quickly and strongly, and the plants will most probably escape injury by late frosts. If wanted extra early from a week to a fortnight may be gained by sowing the seed singly in 3-inch pots in gentle heat, and planting out before the seedlings become root-bound. These Beans also transplant readily out of pans or boxes, and this should be done by those who find their first sowings are coming up badly. In every case a rich and deep root-run should be provided, as they are liable to collapse during a hot and dry season unless abundantly provided with moisture and good food at the roots. If the ground has not been trenched recently, and is not of a heavy binding nature, open a trench or trenches 2 feet wide and a spit deep, fork a heavy dressing of manure into the bottom spit, and return half of the soil first thrown out on to the top of this, making all fine and firm. Water if at all dry, sow the seed thinly, cover with 2 inches of the loose soil, and bring the rest of the latter up to each side of the row in the form of a basin—this facilitating watering operations later on. Seed may also be sown on well manured, ordinarily dug ground, that has been sufficiently long broken up to crumble to pieces freely when watered, or after a soaking rain. Before arranging the rows it ought always to be decided how the plants are to be staked. Stakes of almost any length may be used, those about 8 feet in height being the favourite size. If arranged in a single line the rows ought to be not less than 6 feet apart. Double rows are often preferred, the stakes crossing each other 18 inches from their tops. In this case sow the seeds thinly in two drills 12 inches apart. The crops in the open fields are not staked, all running growth being pinched off the plants as fast as they form, but this plan does not, as a rule, answer well in the more sheltered private gardens. If tried sow the seed thinly in drills not less than 3 feet apart.

**Cropping between Beans.**—Where a considerable number of rows of Runner Beans have to be grown, and these are given the good room they ought always to have, the intervening spaces should also be turned to good account. Early Potatoes, two rows of these being planted near the centre of the 6 feet spaces, are about the best crop that can be recommended for this purpose, and it is not yet too late to plant these. Cabbages, Cauliflowers, Lettuces, and Turnips are other crops that would succeed, and come off the ground before the Beans would shade it badly.

**Dwarf Kidney Beans.**—After Runner Beans have become plentiful there is only a light demand for Dwarf Kidney Beans. It is early in the season that the latter must be forthcoming, and fortunately it is then when they usually thrive, and produce the best gatherings of straight tender pods. With the help of pits, frames, and handlights, the two former being previously occupied by Lettuces, Potatoes, or other early crops that required heat to forward them, good pods may be obtained. There is a considerable gain by raising the Kidney Beans in heat and planting in the frames or handlights, the precaution being taken not to crowd the plants. If not already done more seed of Sion House, No Plus Ultra, or other early varieties should be sown on a warm border in drills 18 inches apart and 2 inches deep.

**Peas.**—Those planted out from pots and boxes and such like are not doing well this season, the majority flowering prematurely. These neither require nor merit staking, quite as good crops being had by allowing them to fall on the ground. If dwarf varieties have been put out 2 feet or rather less apart sow rows of early or second early Kidney Beans midway between them, while any put out 3 feet or more apart may have two rows of Beans sown or planted between them. When the Peas are cleared off the ground give the Beans a good watering if at all dry, then mould them up, and no further trouble will be necessary with them. They will well repay for the room if the Peas do not.

**Vegetable Marrows.**—If these are wanted early great square heaps of all kinds of decaying vegetable refuse, leaves and manure answer well for the purpose, the plants being put out now either under handlights, glazed frames, or any makeshift form of protection. Give them a little good soil to start in, and be not over-lavish with the plants or they will quickly over-run and smother each other. Three plants are enough for a ridge 6 feet square, and even these must not eventually be confined to this space, or they will fail to bear well. It is a mistake to raise the plants long before they can be planted out, as they soon become badly starved and stunted. All such may well be thrown away and fresh plants raised singly in 3-inch pots in gentle heat, taking care to get these finally planted before they become much root-bound. In the warmer parts of the country the market growers' method of culture answers best, the plants in this case forming a minimum amount of haulm and producing most abundantly. Select a somewhat sheltered yet open spot, open a trench running from north to south 4 feet wide and one spit deep, spread over the bottom a thickness 9 inches deep of good decaying farmyard or stable manure, and on this return and level so as to completely enclose it, the soil previously thrown out. Either sow about three seeds in patches 3 feet apart through the centre, or raise plants at once and turn out singly at that distance apart, protecting in either case with inverted flower pots or other contrivances during cold nights.

**Ridge Cucumbers.**—These can be treated in nearly every respect similarly to Vegetable Marrows, as they succeed equally well in the open as on heaps of manure. They require rather less room though, and stand in need of more shelter from cold and twisting winds. Enclosing both Marrows and Cucumbers by thatched hurdles is labour well expended.

**Sowing Seed in Dry Weather.**—There must not be long



intervals, or more than two or at the most three weeks between the sowings of Lettuce, or there will be a gap in the supply; transplanting also being resorted to now as little as possible. With Peas again it is not advisable to wait long for rainfall before making successional sowings—a good rule being to sow more seed when that last put in has germinated. If the ground is dry, hard, and lumpy give it a good watering at night, and it will then break to pieces easily the next morning. Should the soil be fine but the drills dry when opened give these a watering prior to sowing the seed, and cover in with the dry soil. This will be found a much better plan than watering after the seed is sown and the ground levelled. Planting in dry soil is also a mistake, the better plan being to well moisten both the ground and the plants to be moved a few hours prior to cropping it.

## THE BEE-KEEPER.

### APIARIAN NOTES.

FROM some places we hear reports of full supers, and as many as two taken from one hive of Punics. With us the bees had not the means of gathering more than what will tide them over till the Clover season. As I hinted last week unless full breeding space is afforded the seeming abundant early yield of honey will tend to loss rather than profit.

In no case have our bees been supplied with artificial aid since January, and that was very limited, yet all are in a very forward condition and may swarm at any time now. Up till the last week of April the nights were often frosty, and where supers were put on they cooled the hives, and breeding was somewhat retarded. The supers are not first class, and the honey would have been better stored in the body of the hives which ought to be larger than the majority of bee-keepers use. A large hive is not so inimical to the prosperity of the bees as supers, unless they be small, at this season of the year.

Although everything is promising at present, and the bees are in readiness, we do not know what is in store for us; we may have a continuation of fine weather or the reverse. My plans are, if goes well, to let my hives increase a fifth, and to raise nuclei in excess the number of stocks to be kept. With the early season it is probable, should fine weather continue, that they will make an attempt to increase 250 per cent., but this will be checked by one or more of the modes of restriction previously mentioned. On no account should the destruction of surplus queen cells be neglected, nor longer than the eighth day after the first swarm issues. There are exceptions to that rule. Frequently the prime swarm issues with a young queen, the old one may accompany her or be left in the hive for future disposal by the bees. It is, therefore, advisable to examine the stock hive immediately after the issue of the swarm, to ascertain the advanced state of the queen cells. It is an easy task to destroy cells, but a difficult one to depose all the queens that may be free in hives of that nature. Amongst the many methods for swarming there are none so simple and so easily performed as the one just described.

#### JOINING SWARMS.

There are various ways of disposing of bees to prevent an increase and to keep the stocks strong, such as joining two or more swarms, and adding the combs of one hive to another. One plan I was successful with in years gone past was to hive the swarm, set it close by the side of the stock hive, or in front of it, and sometimes upon the top of it, as circumstances demanded, until it was settled and working. As soon after that as possible I transferred some of the combs, with a portion of bees, from the stock hive to the swarm, as well as the supers. Sometimes I put the swarm uppermost, and at others beneath the stock; when uppermost I turned the stock's entrance either to the back or the side. In my Lanarkshire extension hive for two queens the entrance was mostly at the side, with the perforated zinc divider between the two, but for obvious reasons this was only put in several days before uniting, the close-fitting divider being employed at first. With storifying hives, with a swarm above or below, the zinc divider took the place of the floor two days previous to uniting, when the old queen was deposed and the young one fertile.

This plan put an end to swarming. All the working bees continued to gather honey with greater vigour, as all swarms do, than the unswarmed old stock, while the nucleus left insured the prosperity of the hive for another year. My hives with these arrangements were shown at the Caledonian Society 1875 and the three following years. In the "Farmer" and other papers in 1878 the late Mr. Wm. Raitt styled it the "wonderful hive." I mention this fact because at the present time so much is said about so-called "new" systems which are really old.—A LANARKSHIRE BEE-KEEPER.

### TRADE CATALOGUES RECEIVED.

John Laing & Sons, Forest Hill, S.E.—*Fancy-leaved Caladiums*.  
H. B. May, Dyson's Lane Nursery, Upper Edmonton.—*Ferns, Store and Greenhouse Plants*.  
Merryweather & Sons, Limited, Greenwich.—*Pumps and Water Supply Apparatus, Hoses, &c.*  
J. Veitch & Sons, Royal Exotic Nursery, Chelsea.—*Plants and Novelties for 1893.*



••All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Violas (W. B.).**—It is doubtful if an "exact" distinction between Violas as commonly grown and Pansies can be given in a few words, as Pansies are Violas, but all Violas are not Pansies. If any expert can draw a well defined line between them we will readily publish his achievement.

**Violas (John Forbes).**—The box of blooms only arriving as we are preparing for press, it can only be said that the flowers, in great variety, are remarkably good considering the unusual term of bright dry weather to which the plants have been subjected. You evidently possess a very fine collection.

**Carpet Bed Designs (J. M. Stone).**—Mr. A. Graham, Garden Superintendent Hampton Court Palace, Kingston-on-Thames, published a small manual a few years ago containing a variety of good designs for planting carpet beds. You might write and ask him if it is still in print. We do not know of any other.

**Alpine Honeysuckle (Querist).**—There are several so-called "alpine" Honeysuckles, but one of the most distinct and pleasing is *Lonicera pyrenaica*, forming dense dwarf twiggy bushes 6 to 18 inches high, the flowers being borne in clusters, ivory or creamy white in colour. It requires rich loamy soil in well-drained but moist narrow fissures of rockwork, with an open exposure.

**Grapes Rusted (A Subscriber).**—The leaf "infestation" is simply an exudation of sap in the form of globules which have dried. The leaves are rusted. The condition of both leaf and fruit suggest that the temperatures and ventilation have not been properly regulated. There has been a mistake somewhere, but it is impossible to describe it with exactitude in the absence of particulars of your routine.

**Early Peas (H. Witt).**—The pods of Suttons' Ringleader, gathered on May 6th, are good and well filled, and we are not surprised to learn they are three weeks earlier than last year. It is impossible to insert letters written on both sides of the paper when they arrive as we are making up our pages for press. Matter for publication should be written on one side of the paper only—always, and by everybody.

**Eradicating "Dutch Elder" from a Lily of the Valley Bed (Querist).**—The only effectual method is to take up the Lily of the Valley in the autumn as soon as the leaves have died down, and thoroughly remove every particle of the creeping roots, and then replant, taking care not to introduce any part of the weed with the Lily of the Valley roots. The weed may be considerably weakened by cutting the crowns off as fast as they appear.

**Preserving Fruit and Vegetables—Market Prices (St. Julien).**—Certainly the writer to whom you refer had in view establishments of considerable size, in which fruit and vegetables are grown and prepared for commercial purposes, and you did not intimate that your establishment was a small one. It is questionable if what you have in view could be likely to be profitable on a small scale. We will make further inquiry into the matter. You are in error in your assumption that our market returns are "not revised for months." They are revised every week in the market, and are founded on actual average returns. The example you quote does not in the least represent average sales, but the returns of expert growers. These no more indicate the average than the prize animals at a Smithfield Show represent the flocks and herds (including the starvelings) in our pastures. To regard the list to which you allude as anything near the average would be utterly fallacious and misleading. It seems to us that you require something different from real average prices, but have not explained what it is, and perhaps it would not be easily explainable. If your returns are so much higher than those published all the better for you, and the more creditable to your skill as a cultivator.





## OTHER LANDS.

NOTWITHSTANDING it has ever been the policy of this Journal to preserve for itself the character of being eminently practical, there have nevertheless been occasions when it has not hesitated to admit matter of a more general and descriptive nature did it appear likely that this might indirectly conduce to the welfare of its readers. Emigration is a question which nowadays touches the interests of persons of every class more nearly than it used. Partly on account of the increase of population in these Islands, partly on account of the greater facilities of travel, and chiefly, perhaps, on account of the wide-spread diffusion of information through the Press, the eyes of dwellers in even retired districts turn without any of the old-fashioned feeling of dread in the direction of regions half-way across the globe.

When one thinks of the reluctance with which emigration was regarded until within the last thirty years by the mass of the inhabitants of Great Britain, it is difficult to understand how the British race has become so widely extended as we see it now. The Irish Potato famine certainly acted as a drastic measure for promoting emigration from the sister isle. Previously to that visitation the area of Greater Britain was extended mainly by haphazard recruitment from the country districts of England and Scotland. Restlessness or necessity drove individual units abroad, and these, by their private reports, drew their friends and relatives after them.

For the last fifty years, however, the Press, either in the form of books of travel or of newspapers, has been the main instigator of emigration. A large accession to the ranks of American emigrants, too, may reasonably be attributed to the songs of Henry Russell and the novels of Mayne Reid. Now, as we may see in any perusal of a daily paper, the incitements to quit the home of one's birth abound, and it is often a difficult matter for an intending emigrant to decide upon a destination in the face of the various and glowing pictures held out by competing syndicates and colonial governments. Inasmuch as there is a general conspiracy on the part of the promoters to procure population at all costs, successful speculation in *sparsely peopled* land being impossible, it often happens that emigrants are misled by unscrupulous misrepresentations, to their disappointment or absolute undoing.

It cannot be denied that, despite the prosperity of these islands, the conditions of life are rapidly altering and making the existence of a large rural population impossible. The industrial stage of social development is opposed to small holdings, and the more England becomes the industrial and commercial centre of the world, the more futile will the efforts to restore the class of small cultivators appear. Economical tendencies are all the other way. There are, however, two portions of the globe in which the small cultivator seems destined to enjoy an exceptional future, and these are New Zealand and California. In some measure the same may be said of Tasmania and parts of Australia, though scarcely in so great a degree. As it is possible that there are among our readers many young men associated with gardening and fruit culture who are contemplating emigration, it has occurred to the writer that the experience of some twelve years spent in California and the Australasian colonies might not be unprofitably communicated. It must, however, be stated that in penning these notes the writer desires to repudiate all intention of exciting false hopes.

Emigration is a lottery, and it is well to set out with moderate

expectations, or even the mere expectation of earning a comfortable subsistence in lands of genial climate and easy social conditions, than with visions of shaking the Pagoda Tree or "striking" a Comstock lode. Now, as aforesaid, there are fortunate exceptions in the ranks of emigrants whose luck is blazoned as a misleading beacon; but these serve only to prove the rule that to the vast majority emigration means nothing miraculous in the way of success. To the unmoneyed man it means expatriation for life, as few persons going without capital become speedily rich; and by the time competency has so crowned the settler's efforts as to enable him to revisit his native land the old folks have passed away, and a young generation has arisen to whom Joseph is unknown and not particularly interesting. But there is consolation; for as soon as the novelty of sightseeing here is exhausted the emigrant longs to be off to his new — his only home, again, where lie the true hearts and the more congenial surroundings which, unbeknown to himself, have become essential to his happiness. The sentiment for "Old England," or "Home" as it is always called wherever the English Flag waves, is still very strong, and extends to colonists who long in vain from childhood to old age for a glimpse of the Mother of Nations; but the conditions of life are too restrained here to be long palatable to any but those who have left England after their minds have been thoroughly moulded.

The first effect of opening up the new lands of America and Australia was to show their enormous capacities for the production of wheat and live stock, and there began the development of communities based upon pastoralism and a wasteful and primitive agriculture. Within the last twenty years, however, the capabilities of certain portions of these regions for the close cultivation of fruit have been becoming more apparent. There are signs, indeed, of the advent of a new era when the supply of temperate fruits will be perennial here, those of the southern hemisphere coming in at the close of the winter to continue the succession as the stock drawn from the northern hemisphere gives out. The time of its establishment depends merely upon the improvement in the speed of steamers and their adaptation to the safe carriage of such perishable cargo as fresh fruit. Once it is realised in South Africa, Australasia, and Argentina that there is an unlimited market for fresh and dried fruits in Europe, a renewed stimulus will be given to production and exchange in those at present desponding and depressed lands. Even now a remarkable advance is noticeable upon the conditions prevailing in the fruit industry thirty years ago, the periods for subtropical and tropical fruits being much more prolonged than formerly. It is, therefore, not only possible but highly probable that before one generation has passed Londoners will be able to buy Grapes, stone fruits, Apples, and Pears in late winter and early summer at almost the same rates as they are sold in Spain and France during the height of the season.

Southern Europe has no longer a monopoly of the trade in those fruits of which it has hitherto been considered the seat. The culture of the Orange and the Lemon is now developing rapidly elsewhere. In California the Citrus zone is yearly extending from the centre of Los Angeles in the south, and were accessibility to an inexhaustible market as that possessed by California apparent to the people of New South Wales, Sydney would soon become the centre of as great an industry. Indeed, there is nothing in the way of sub-tropical fruits which Australia cannot grow with as great prodigality as California did she only enjoy the advantage of having as fine a market at her doors, while her extension for these purposes is three-fold that of California, or equal to the whole of Southern Europe. There are, however, four countries which offer exceptional advantages to an English emigrant who would combine the pleasures of life in Andalusia with those of his own home, who would in short enjoy what is best in the climates, the fruits, and the flowers of that portion of Europe extending from the south of England to Sicily. These four countries are New Zealand, Tas-



mania, California, and Oregon. I place New Zealand first of these in spite of the vigorously "blowing" of the Californian (who, by-the-by, is the most blatant "blower" of the most eminently blowing citizens of the U.S.A.). In season and out of season does the Californian "blow," awake and asleep; each day of the week, each week of the month, each month of the year does there issue from the Press of California an unfailing stream of literature glorifying the "Golden State" and recapitulating its *ree*-markable *ree*-sources. If you wish to irritate a Californian merely chant the praises of Oregon, her neighbour State on the north, where, says the Californian scornfully, it rains thirteen months in the year. The Oregonian, on the other hand, tells you that if your future is uncertain and you wish to become "acclimated to infernal fire, sir," go to the Mohave Desert in Southern California.

The truth lies between these extremes. Oregon is a very beautiful State, to an English person perhaps more beautiful than California, being more like the north of France and Belgium, while California resembles rather southern France and Spain. The fact is the two together comprise what is best in the whole of the United States in respect of genial climate and extraordinary productiveness. Why the inhabitants of California should "blow" so much more than those of Oregon it is not easy to say, for though the climate of California is more favourable for delicate persons, it is too dry for the encouragement of that perennial verdure which is so pleasing to the eyes of English people. While it is an absolute paradise of grass and flowers during the months of March and April, it has for the rest of the year a very brown and dried-up appearance. Bret Harte describes it as the land of a "spring which obtains but one month of the year;" consequently, despite the not unjustifiable boasting of the Californian, I should say that a robust English person would find Oregon a more congenial place of settlement, as being more like his own home, just as he would prefer New Zealand or Tasmania to Australia, or the neighbourhood of Orleans to that of Marseilles.

But if Oregon rather than California is the land of the Apple, the Pear, the berry, and the prunous fruits, she entirely cedes place to the latter in respect of wall fruit and in the matter of Grapes, Almonds, Oranges, Lemons and Figs. As the two countries lie direct north and south there is a neutral zone about the frontier line over which a common climate reigns and in which the same fruits can be successfully grown. Thus at Jacksonville in Southern Oregon the Grape and the Peach mature well, while in Shasta county in Northern California Apples and Pears of very good flavour and great size can be produced. As regards the fruits of the colder portion of the temperate zone California has indeed the advantage, for the Sierras run throughout her length, and upon their foot-hills and slopes a Devonshire climate prevails during summer in latitudes where the great valleys or plains below lie blistering in the heat of Campania or Provence. Similarly along the coast for a distance of seven hundred miles run the coast hills within reach of the sea breezes, and over this strip there reigns a climate of eternal spring. In it are situated those health resorts which are fast becoming more popular among persons of delicate constitutions in Europe as well as in Northern America. In fact California has three zones of climate—the vernal zone of the coast hills, the hot zone of the central valleys, and the alpine zone of the Sierras. Hence her capacity for fruit-growing is not only great but varied, and she makes it a matter of pride that she can grow anything from Gooseberries or Blackberries to Bananas. This is true, but as might be expected much of these are mediocre in quality, and in her especial lines more sober Oregon can surpass her gay, boastful, and bounteously endowed sister State.—M. H.

#### HARDY FLOWER NOTES.

"A GOLDEN spring," such are the words which might well be inscribed in illuminated letters on the garden record of the year. Worthily they may be applied, for never has my garden given so

much pleasure and such wealth of beauty. Alloy there may be in the gold, but there is only sufficient admixture to give piquancy to the pleasure, and at no time since the hard winter days passed away have we had cause to complain. Even the east winds, less prevalent than usual, have had their unwelcome force and fury subdued; and did they for a time muster their forces to assail the beauty of the flowers, their fury was of briefest duration, dying away in softest breathings and gentlest whispers, as if pleading forgiveness for the rude assault. Thus, though comparatively little rain has fallen, the earth has not been robbed of its moisture, and the flowers have enjoyed to the full the gracious season. Thus it is that one is reluctant to move from the precincts of the garden to take up pen even in praise of the flowers, feeling that at such a time what is written in the house may present the mustiness of the herbarium or the flower lover's library, instead of breathing out to some extent at least the freshness and life of the flowers themselves. But there are practical inconveniences which stand in the way of writing amid the flowers, and we must tear ourselves away and solace ourselves by sitting where uplifted head will disclose some at least of their blossoms. Short as they come of the more cultured grace of the English florists' Tulips so recently spoken of, the Dutch varieties show by their beauty that they, too, are of patrician race, although their markings are inferior to those of the flowers which have been the pride of our insular Tulip lovers. Beautiful as they are they lead one to long for some of these English kinds, not perhaps to be grown under a canvas tent, but to be a crowning pride to the hardy flower garden, where nothing is too choice to enter, and where beauty in its highest form should find admission.

Looking, then, at the Tulips of the garden, which have enjoyed the unwonted calmness of the season, moving slightly in the gentle breezes so markedly in contrast with the usual gales, which here, to our dismay, at times snap off the heads of these flowers, we cannot but remark upon the superior grace and beauty of the single flowers as compared with the double forms. Useful as the latter may be for bedding purposes, they are in many ways inferior to the others for the garden of hardy flowers where the Tulip is seen at its best with the setting of greenery afforded by the springing growth of the later herbaceous flowers. Even the commoner early-flowering Tulips of self, or almost self colours, give us rich tints of crimson, of gold, of blush pink, or of ivory white, and when we come to the natural species we have much of interest, apart from their own intrinsic beauty. We have spoken of some of these before, and may again speak of some in more detail, but a species which has of late been more sought after, and which is likely to be increasingly admired, deserves at least a passing notice. This is *Tulipa vitellina*, which in ordinary seasons flowers late in May, but which has this year been in flower from about the middle of April. It opens of a delicate sulphur yellow flushed with green, and passes off to almost creamy white. It is about 2 feet in height, and though no "fop of the parterre," is extremely attractive. I believe it is a true species, but can find no information about it, as the compilers of our ordinary works of reference make no mention of the plant.

Of more lowly stature, yet of choicest beauty on rockwork or trailing over the stone edging of some of the borders, are the dwarf Phloxes, which form such beautiful mounds of flower as to be universally admired. To the ordinary observer they scarcely seem Phloxes, so widely are they removed in appearance from their autumn flowering congeners which, with equal or greater splendour, make our gardens gay.

The awl-leaved section, as represented by the varieties of Phlox setacea or subulata, are much admired with their spiny tufts of foliage and profusion of bloom. Is *P. setacea* synonymous with *P. subulata*? There seems to have been some difference of opinion on this point, but for garden purposes minute distinctions are of little consequence, and we may adopt the classification of the nurserymen and treat them as practically the same. It is unfortunately true that some of our newer varieties, for some of which we are indebted to the late Rev. Mr. Nelson of Aldborough, are not so hardy as others, and require protection in some localities. This may perhaps be avoided by planting in selected positions, and I have generally found that an eastern aspect protected from much wet in winter is a preferable one. One of the brightest, which is, unhappily, a little tender, is *P. s. Vivid*, with small flowers, but of really "vivid" crimson colour. Two others which have up till now proved a little tender here are *P. s. Perfection* and *P. s. pallida*. This, however, cannot be said of *P. s. atropurpurea*, which is one of the most useful of all, never failing to grow and flower well every season, giving with its pretty crimson purple flowers a pleasant aspect to the spot it occupies. Seemingly, too, one of the hardiest is *P. s. Nelsoni*, worthily named in honour of one of our lost horticulturists, with very beautiful little bushes of white flowers. A very beautiful little plant also is *P. s. The Bride*,



with pretty flowers with a tinge of pink at the eye, which feature is, we may suppose, the origin of the name, being supposed to represent the blush of the bride. Other varieties of the section might be mentioned, but we are unwilling to leave *P. stellaria* and *P. stellaria* G. F. Wilson, both of which are very beautiful, with more diffuse and spreading habit than the subulata varieties, forming, indeed, in some soils what an eminent grower of hardy flowers described to me as what may be likened to "torrents" of foliage all spangled over with starry flowers of white or lilac. *P. reptans*, known also as *P. verna* and *P. stolonifera*, is so well known as to need little mention, but one of a similar character though much superior may well be sought for. This is *P. amœna*, which, when in full flower, is certain to give satisfaction to the grower, with its somewhat villous leaves and masses of purple or pink flowers. Several other species and varieties would call for notice, but as other flowers have equal claims they must be left to another time.

The cultivation of these alpine Phloxes presents little difficulty where the climate is suitable. In my garden, with the exception of those here noted, they prove long lived, and give no trouble in light sandy peat, the awl-leaved section and the varieties of *P. stellaria* being grown over stones. They have, however, their enemies in the shape of snails and slugs, which are particularly fond of the flowers and leaves, and will, unless searched for, destroy the bloom of the season.

The Wallflower is always acceptable in our gardens, its sweet perfume and pleasing colours giving much true pleasure. This last winter has, however, been a fatal one, and few of our plants have been left to supply cut flowers or to brighten the borders. Singularly enough, however, the Cheiranthi or alpine Wallflowers have suffered less than usual, and have formed charming objects on the top of a rockery protected from the biting north winds by an old wall. Here the pleasing canary-coloured blooms of *Cheiranthus alpinus* are the observed of all, while some distance apart its fellow, *C. Marshalli*, is conspicuous by its considerable habit and massive heads of bright orange flowers. Like the dwarf Phloxes, they should be propagated by cuttings as early as possible after flowering, and it is well to keep a spare plant or two in a frame in case a winter of unusual dampness and cold should destroy the larger plants.

While the white Arabis which formed such great mounds of silvery bloom so enticing to the bees has become untidy and stands in need of its annual close clipping, there is no lack of white flowers, masses and clumps of *Hutchinsia alpina*, of Candytufts, and of Mossy Saxifrages and many others, supply the snowy feature so delightful at this season in particular. The flowers of the *Hutchinsia* although so small in themselves are so freely produced over so long a period that this plant should be more largely grown, and it is again presented for increased notice.

With such flowers as these and with scarlet Heucheras, crimson Thrifts, white Alliums, golden Globe Flowers, pure Poet's Daffodils, blue and pink Squills, the yellow *Morisia hypogæa*, and many other flowers of countless hues and forms, the garden offers its owner treasures of beauty, pouring forth pleasures of highest worth to him who seeks to read her lessons truly.—S. ARNOTT, *Dumfries*.

#### DRACÆNA THALIODES FOLIIS VARIEGATIS.

I HAVE read in the report given of the last meeting of the Royal Horticultural Society, and published on page 381 of your estimable journal, that a first-class certificate has been granted for *Dracæna Sanderiana*, exhibited by Messrs. F. Sander & Co., unconditionally, while they have accorded me a similar award conditionally, "subject to its being correctly named," for the same plant exhibited under the name which was given to it in 1888, at the time of its introduction, and by which it has been known since then in the Botanic Gardens of Berlin and of Herrenhausen.

It is certain that the name under which I have shown this plant is correct, since I have exhibited the identical specimen which has figured in the Berlin Botanic Garden since 1888, and have displayed at the same time the very label which the plant bore at Berlin, in a scientific institution of the first rank.

The other part of the plant exhibited by me and that exhibited by Messrs. Sander & Co. have undeniably the same origin; and it is possibly useful and opportune to point out the mistake which has crept into your pages, where it is stated that *Dracæna Sanderiana* has been introduced at Messrs. Sander & Co.'s by Mr. J. Braun. The same plant was introduced at the same time by Mr. Braun into the Botanic Garden at Berlin, and at Mr. Bluth's, a horticulturist at Steglitz. It is at the establishment of the latter that Messrs. Sander & Co. have bought their *Dracæna* which they named last year *D. Sanderiana*.

The priority of the name, *D. thalioides foliis variegatis*, being then well established, the plant exhibited by Messrs. Sander is not correctly

named. It seems to me, therefore, that the certificate awarded to these gentlemen for their plant ought to have borne the same condition as mine, viz., "subject to its being correctly named."

I do not protest against the decision of the Floral Committee, but being quite a new member of the Royal Horticultural Society, I do not



FIG. 71.—DRACÆNA SANDERIANA.

probably yet understand its traditions, and there is a point on which I do not explain myself well. I seek, then, for information from you, and I beg that you will be pleased, by inserting my letter in your next number, to procure for me the explanation which I am desirous of obtaining. It will likewise in all probability interest many of your readers.—L. LINDEN, F.R.H.S., *Brussels*.

[The illustration (fig. 71) represents the plant referred to as exhibited by Messrs. F. Sander & Co. under the name of *Dracæna Sanderiana*.



It would appear from the absence of any condition that the Committee accepted this as the legitimate name, while they did not accept that under which Mr. Linden exhibited the same *Dracæna*; yet according to the above letter it was admitted in the Berlin Botanical Garden in 1888. As the Royal Horticultural Society could not record the expression of a doubt without an intention to investigate the matter with a view to the ratification or removal of such doubt, we may expect to have the final decision of the Society on the whole subject, and we shall be glad to publish it. As our artist happened to sketch one of the St. Albans plants the name under which it was exhibited is given, whereas Mr. Linden is equally entitled to employ the name which he regards as correct, at the head of his communication. It is for the Royal Horticultural Society to say whether Mr. Linden's name is correct or not, since the certificate was granted conditionally. This *Dracæna* is not only distinct from all others but attractive, and we should think easy to grow under suitable conditions. We may add that *Dracæna thalioides*, as first grown in the establishment of Jacob-Makoy, of Liege, about thirty years ago, was found to be a synonym of *D. Aubryana*. This name was given to the plant by M. Brongniart of the Museum of Natural History at Paris, where it was introduced from the Gaboon by M. Aubry-le-Comte.]

### PROPOSAL FOR AN INSTITUTE OF HORTICULTURE, MUSIC, AND THE FINE ARTS.

WILL you kindly favour us with space in your valuable columns to submit a project for the establishment of an Institution of Horticulture? To-day, England is very much behind other great nations in this respect, and although efforts have been made to provide suitable accommodation for our ever-increasing needs, we have no Institute of Horticulture, but exhibitions must be held at odd places, some of them very ill-adapted for such displays.

The financial aspect has been the difficulty. In order to meet this we would suggest that with horticulture should be associated music, the fine arts (all kindred in sentiment), and that the proposed institute should be designed especially to meet the requirements of these societies. There is distinctly a need for a suitable institute for horticulturists, and there is also as great a need for an institute to receive and exhibit the large proportion of paintings which are not hung at the Academy.

Without going into details, we would suggest that a meeting might be held of horticultural gentlemen to confer upon this project, and perhaps meet representatives from the Royal Academy, Royal Albert Hall, Amateur Orchestral Society, Stock Exchange Orchestral Society, or other similar associations, and we believe the outcome of such a conference would be the establishment of an Institute of Horticulture, Music, and the Fine Arts, where, all the year round, pictures and sculpture would be exhibited, concerts of vocal and instrumental music held, and lectures, conversaciones, and exhibitions arranged under the auspices of the Royal Horticultural Society; and all these might, if desirable, proceed at the same time, in the same hall, affording attraction to everyone (for assuredly everyone is interested either in music, pictures, or flowers), and the effect of the three in combination is always harmonious.—W. WOOD & SON, *Wood Green, N.*

[We readily insert this communication, and our readers are free to express their opinions on the proposal of our correspondents.]

### SEASONABLE HINTS ON FLORISTS' FLOWERS.

I VERY much doubt whether the word seasonable is applicable to anything one may write on the subject of the garden during this most extraordinary year, which has been both unseasonable and unreasonable. What can be said of a season when Tulips, which ought to be in flower by the 20th of May, are well nigh over by the 1st of the month; when the Hawthorn has resigned its sweet name "of May," and is in flower at the end of April; when the Laburnum is full of its golden tresses at the same time, and when there is a very great difficulty in imagining where we can possibly be in this year? It is true we hear of a "dismal down-pour" in the North, but I feel sure if it only reached us in the South we should call it anything but dismal. It is all the more felt because we can contrast it with last year, a particularly late season—so late that amongst other things Rose growers got excited over the dates of the shows, and were for making them later; and now! Well, I have heard people talking of putting back their shows a fortnight; there is this advantage in such a climate, that our "hints" must alter—at any rate, as to the time allotted for the various operations.

AURICULAS.—As I have already said, the season has been a very disappointing one to many Auricula growers, and the very early time at which the plants have gone out of flower necessitates a

much earlier removal to their summer quarters. They should be now placed in frames on the north side of a wall or fence. Before removing them from the pits where they have been growing and flowering all through the spring, I always give them a dose of fumigation as it kills all the aphides, which are very injurious to the well-being of the plants. Each plant is afterwards examined, and if any woolly aphid is discovered round the neck of the plants they should be removed with finger and thumb, otherwise they need not, I am quite convinced *now* (although I once thought differently) trouble the grower. When they have been removed, and time can be given to them, the work of repotting may begin, commencing with the smaller plants and offsets first. Some sorts are very prolific in the production of offsets, and some just the reverse, and one may wait for years without getting one, and especially is this the case in the more valuable edged sorts. Some of the selfs readily yield offsets, and even the newer kinds such as Heroine, Black Bess, and Mrs. Potts, will soon be in every grower's hands; while for Magpie, Shirley Hibberd, and others they will have to wait patiently for years.

In potting, whether it be old plants or offsets, the simplest compost is, I think, the best, and the chief ingredient, on which I believe, indeed, the future well-being of the plants depends, is a good sound loam, the top spit of a meadow or down. Did I not hear two of our growers having a confab the other day? "Where can I get some good loam?" was the eager request of the younger grower. "Oh! of course, down near Epsom, the best loam in England," was the reply of the more experienced grower. Well, we cannot all go there, and must only look out for it where we can. There is, however, a mistake sometimes made on this subject. I have heard people expatiate on their heaps of loam laid up for two or three years. I think this is too long. You lose then the fibrous roots of the grasses, which have by this time quite rotted away, and it is amongst them that the roots of the Auricula delight to find their way; moreover, when the fibre is gone the loam is apt to be too heavy, so I think that a heap laid up for about a twelvemonth is in the best condition. If to two-thirds of this and one-third of decayed cow manure, one-sixth of leaf mould, and a little sharp sand be added, it is a compost good enough for anything. I well remember that old George Lightbody used to say that some plants required more loam and some more leaf mould, and he used to have the different ingredients of his compost laid separately on his potting bench and act accordingly; but few, I imagine, will be inclined to take this trouble.

I am inclined to think that it is better to under-pot than to over-pot the plants. I used at one time to think it better to use large pots, but one is never too old to learn, and I remember in my early days that the fine collection of John Dickson of Acre Lane, Brixton, than which I have never seen a healthier, was grown in small pots. Another point to remember is to pot firmly. This is more especially needful where there is a good deal of fibre in the soil, for as that gradually decays the soil somewhat shrinks, and if the potting is loose it makes gaps in the surface which are not good for the plants. When they are potted they had better be kept close in the frames for a few days and shaded, first giving them a good supply of water. They will of course soon lose their outer leaves, but the fresh heart will soon develop itself, giving them promise of the future year.

CARNATIONS AND PICOTEES.—The influence of the season is shown amongst these plants as in others. I winter my small collection, or rather selection, in pots, and plant them out in March or April. They have not had a drop of rain since they were planted out, and the great amount of sunlight and warmth has caused them to spindle for bloom fully a month before their time. We had had little of the cold cutting winds we too often experience at this time of the year, and this has to some extent compensated for the drought. I have noticed of late that when the talk is about Carnations, it is the border varieties that people have most in mind, and there seems to be an evident decrease in the interest felt in the more refined varieties of the florists; but whether it be show or border varieties, all are much too early on the move. They are now spindling up for bloom, and will require staking at a much earlier period than usual; mine have been done some time. I find that where the plants have been attended to in the matter of watering that the grass is growing well, and that one may hope to have some produce by-and-by.

PANSIES.—This is a very trying time for these plants in the south of England, which is never very favourable for them; and where they have been planted in beds I should think very large gaps will be found. My few are in pots, where they can be more readily supplied with water and shaded. This is all the attention they will require now, except that the pots must be kept clear of weeds, and any long shoots tied to short sticks. The forthcoming Exhibition at the Drill Hall will perhaps give an impetus to their culture; but here, as in the Carnation, it is not the old how



varieties which attract the most attention, but the Fancies which violate all the old rules of the florist, and for their variety of colour are much appreciated.

**GLADIOLI.**—The only thing that can be done with these at present, unless it be what I am very much disposed to do on account of the drought, viz., mulch the beds with short manure and then water them. If, as I have been told by some wise man, "the cause of my disasters last year was the excessive moisture" I ought to have some hope that the very opposite extreme would be favourable. I, however, think that some moisture is desirable, and so shall mulch; the plants seem to have come up well. I believe it is much better to give help early if it is to be given and then to wait till the growth is made.

**RANUNCULUSES.**—It has been an especially trying time for these roots, which, like most of the tribe, are moisture-loving plants. It is a good plan to give them a top-dressing of about an inch of leaf mould, and then to water between the rows. The beds should be kept clear of weeds. I find that, notwithstanding the excessive drought, the plants look well, but I am afraid that they will be much too early.

**ROSES.**—Notwithstanding the hopes entertained by "W. R. Raillem" (page 310), I do not find, at least in my own case, that the maggot has left us alone. It seems to be about as abundant as usual, and the same measures must be adopted for getting rid of them—hand-picking; there is nothing that can do it half so effectually. I do not know what will be the upshot of the present state of things, but so far as present appearances go the Rose shows ought to be in the end of May and beginning of June; but there is a good period yet to be got over, and we do not know what effect May will have. If we get that cold wave we have had of late years about the 20th it cannot fail to be disastrous. Let us hope it will not visit us this year.—D., Deal.

### SPRING GARDENING AT BELVOIR.

[By Mr. W. INGRAM. Read at meeting of the Horticultural Club, May 9th.]

IN introducing the subject of spring gardening I may venture to speak of the extremely satisfactory results that attend the system when fairly carried out. Flowers seem so welcome in early spring, and there are associations and sentiments in some of them that appeal to all natures, whether lovers of flowers or not. The Primrose, Forget-me-not, and Daffodil are replete with memories of early days. I have repeatedly enlisted the attention of people confessedly indifferent to floriculture by a walk through the spring gardens; the very simplicity of the materials employed seemed a special merit, and excited surprise and admiration. The uncertainty of our variable climate will not allow us to rely with assurance on securing a great display of flowers so early in the year as February, but there are happily plants ready to respond to the first warm gleams of sunshine, and it is seldom that April passes without awakening from their winter's rest the Violet, Aconite, Snowdrop, and Hellebore.

The period of spring might be floriculturally divided into three parts according to the time of blossoming of the vernal flowers—February and part of March, mid-March and early April, the rest of that month and May. The second period is rich in interesting plants chiefly bulbous, that supremely beautiful plant *Chionodoxa Lucilæ* being conspicuous. With it appears *Anemone blanda* and *cœrulea*, *Scilla sibirica* var. *bifolia*, *Iris reticulata*, and *Corydalis cava*. The five first named grown in masses caused a lady to exclaim, "Oh, Mr. Ingram, you have brought the sky down to the earth!" The third period is rich in many handsome plants and the more showy bulbs; but to these I shall advert in due course. The preparation of the various plants that belong to this system of gardening is a matter of very considerable importance. It is seldom that the commoner plants specially adapted to the purpose can be obtained from nurseries; in every way it is better to prepare them as near the home garden as possible, and there are several reasons why this course should be pursued.

We are all more or less aware of the influence exercised by soil in promoting health and vigour in plant life, and the opportunity of employing the various kinds known to be most suitable is one to be especially valued. It happens that soil of the most opposite character is called for. *Erica carnea* is one of the most charming plants for early spring, and peat or a light silicious soil is required for its successful culture. Another plant, the Wallflower, which I grow largely, prefers a soil which would be death to Heaths; it revels in a light calcareous soil. I find it advisable to prepare beds by dressing with lime scraps or old mortar; and when the seedling plants are pricked out and established we check a too vigorous growth by lifting each plant with a fork, so as to break the deeply penetrating roots, thus causing a compact

mass of fibres to be produced. Wallflowers will grow in any soil, but plants so treated are less liable to injury from frost. Many hundreds were treated in this way last year, and I do not think I lost half a dozen from weather.

I may relate an instance of the success attending an experiment in preparing suitable compost for the Primrose, a plant singularly impatient of drought, and large numbers perished annually even on our heavy unprepared land. From this cause I was able to provide beds of materials composed of grass sweepings from lawns, leaves, and a small quantity of decayed manure, which I carted on to some rough outlying land to a depth of between 2 or 3 feet, enough, indeed, to smother all weeds beneath. When turned over several times rolled and settled down on this I placed a layer of soil. I had then a bed retentive of moisture, rich in decomposed vegetable matter, which annually improved, carrying successive crops of Primroses and other spring plants.

One of the most useful and reliable plants for spring decoration is the *Aubrietia*. It is a plant that readily adapts itself to very varying circumstances. It thrives in the rich soil of the kitchen garden, it does equally well in the herbaceous border, and spreads and blooms abundantly on rockwork, deriving support from the poorest soil. I raise thousands of seedlings annually from the typical garden kind, *Aubrietia græca*, which affords many shades of lilac, some approaching purple. I once obtained from seed a light pink variety, but it remained for that indefatigable and successful horticulturist, Herr Max Leichtlin, to secure a magnificent variety, justly named after him. Its rich crimson flowers in masses give an effect unsurpassed by any plant I possess. Rosy plush is another contribution from Baden. I have also a white kind from Mount Athos, but it is not floriculturally valuable.

I grow an allied plant, *Arabis albida*, largely. It is useful in combination with other plants; its pure white flowers form a pleasing contrast with *Scilla sibirica*, and later in the year it forms a good base for scarlet Tulips. Another plant extensively employed at Belvoir is *Saxifraga ligulata*. It has the merit of blooming early. It is sometimes cut down by frost, but this may be averted by Fir boughs. Even when the bloom is over its broad leaves cover the ground and provide foliage or a substitute for Hyacinths freely planted amongst it. *Saxifraga Stracheyi* is one of the handsomest of the tribe, but is so often injured by frost that a cautionary recommendation must accompany mention of it.

I need hardly say that I grow large numbers of Violets. Having sunny and sheltered banks this universal favourite may be, and is, gathered throughout the winter. One advantage I possess is ample supplies of leaf soil; useful when properly prepared for many plants besides Violets. It is essential that Violets be divided and replanted every year. I obtain some fine effects from the use of two kinds of *Doronicum*, *excelsum* and *austriacum*. This season they have been exceptionally fine. A bold, free blooming, and hardy white *Cardamine*, known as *rotundifolia*, deserves more general cultivation. It has been objected to as having a coarse common appearance, but it is my doctrine that all hardy early blooming plants must be received with thankfulness. It blooms throughout April. One of the most effective and generally useful plants is the yellow *Polyanthus*; it blooms freely, and produces a compact mass of the purest yellow. I raise many thousands from seed every year. In favourable years they can be utilised the first year, but I depend generally on two-year-old plants. A pale yellow variety is effective associated with *Aubrietia*. There are few plants more admired and cherished than Primroses, both double and single. The former, alas! resent removal in the spring, and I cannot boast of a good stock. The single crimson and white form some of our best beds.

I will try to classify the plants I chiefly employ according to their time of blooming. I have one large detached bed on a sunny slope on which I have planted masses of the flowers that may appear in February, and are pretty sure to do so before the middle of March. The first of these to flower is *Crocus Imperati*; *Aconites* and *Snowdrops* soon follow; then *Anemone blanda* and *Chionodoxa Lucilæ*, followed by *Scilla sibirica* and *bifolia*. The beautiful *Iris reticulata* succeeds, then *Puschkinia scilloides* presents its bluish-white blossoms. The common kinds of *Crocus* form a fringe to this large bed, and the earliest blooming Primrose serve as a bordering. In warm seasons I can rely on *Narcissus præcox superbum* and *N. Stella*, and also the dwarf *Narcissus minor*. Come frost or snow, wind or wet, I may always depend on the hardy and handsome *Saxifraga oppositifolia*. I can speak strongly of the interest and beauty of a bed thus occupied and arranged.

The next division of the early season is mid-March and early April. *Erica carnea*, *Saxifraga ligulata*, the early *Narcissi*, *Arabis albida*



Aubrietia græca, Polyanthus, Primrose, Hyacinths, Tulips, Cardamine rotundifolia, the later Hellebores and Myosotis dissitiflora.

The third division will include the foregoing, with the very important addition of Aubrietia Leichtlini, many Narcissi, Hyacinths and Tulips, Alpine Auriculas, Daisies, Wallflowers, both double, dark, and yellow, also Doronicum excelsum and austriacum, Myosotis dissitiflora, and M. alpestris Victoria.

Beds which we make up with various plants, although not giving a great effect of colour, are, nevertheless, interesting from the variety of plants they contain. They are useful in receiving plants when the stock is insufficient for masses, or when their duration of bloom is short. In these we have Hepaticas, Anemone nemorosa plena and A. Robinsoniana, Tiarella cordifolia, Saxifraga oppositifolia, Pulmonaria, Cardamine, Narcissi, Epimedium maceranthum, double Primroses, Saxifraga muscoides atro-purpurea, Corydalis nobilis, C. cava, Ranunculus montanus, this year a veritable gem; Adonis vernalis, Dog's-tooth Violet, and the Alpine Daisy.

A description of some of the bedding arrangements may be of interest. I will just slightly mention some that have been much admired. In one part of the castle garden there are six beds 5 yards across holding about 100 plants.

1, Aubrietia Leichtlini, edged with Alpine Daisy, and dotted with about fifty yellow Tulips. This is a very striking and effective bed, and most enduring.

2, Arabis and Scilla sibirica, edged with dark crimson Daisy, and dotted with scarlet Tulips.

3, Yellow Polyanthus, edged with dark red Daisy, pricked out with dark red Tulips.

4, Aubrietia græca, edged with pink Daisy, and dotted with Couleur Ponceau Tulips.

5, Heath, edged with Heuchera Richardsoni, and dotted with yellow Tulips.

6, Crimson Primrose, white Tulips, pink Daisies.

There is another set of beds which I call from their make up bouquet beds. These have a centre of Erica carnea, edged with variegated Arabis and succeeded in bands by yellow Polyanthus, Aubrietia and yellow Primrose. Red, white, and blue Hyacinths brighten the central part of the bed.

In this garden there are raised beds, some filled with the two Doronicums, and others with dark Wallflowers and yellow Daffodils. A very large bed in the centre is filled with yellow Wallflowers, banded by Myosotis and followed by Aubrietia Leichtlini and Daisies.

I have not space to continue the description of beds, having left out our best garden, called after the Duchess.

#### HAZEL BUD AND PEAR LEAF MITES.

I HOPE Mr. J. Hiam (page 358) has procured specimens of Hazel bud's infested with mites, and has subjected them to microscopic examination. It depends, however, upon the buds taken for finding the condition I found them in on April 7th, which is shown in the *Journal of Horticulture*, April 20th (page 321). On weakly growths, feeble or lean bushes, and aged trees, ninety-nine per cent. of the buds in the condition shown on April 20th (page 321), remained in the same state up to May 6th as they were found on April 7th, that is, they were utterly destroyed, and the growths, bushes, or trees presented no evidence of continued existence beyond a straggling growth here and there.

On May 6th buds on strong wood and vigorous bushes had pushed a little growth, and instead of the attacked buds being entirely destroyed they were making efforts at elongation, forming what are called witch knots. This latter term is very misleading, for the witch knots caused by mites only apply to the bud growths of the Birch, Currant, Hazel, and Yew, and instead of remaining undeveloped, as in the cases just recited, enlarge to a conspicuous size, or grow into stunted branches, the cone-like protuberances or bunches attaining the size of a hen's egg, and, if repeated, the growth of the stunted branches may become as large as a cricket ball. These witch knots must not be confounded with the curious clusters of twigs that frequently occur on Birch, Bullace, Hornbeam, and occasionally on Fir trees, which at a distance resemble a bird's nest formed of twigs, for these are the work of minute fungi belonging to the Ascomycetes group.

Examining the attacked Hazel buds not killed by the mites on May 6th, I found the what should have been shoot leaves and buds had produced a luxuriant crop of outgrowths, an enormous quantity of hairs, and on these the mites were browsing. They were generally of the form shown in c, fig. 61, *Journal of Horticulture*, April 20th, 1893 (page 321), but of different sizes. There were no eggs nor empty sacs, and the whole nest was as clean as "a new pin." But I was for a long time disappointed, for there was something in the life history of mites I wanted to get at, the cycle being broken for want of a certain "missing link." The four-legged mites do not pair but increase by "budding,"

and in the spring they become as retiring as a fowl moulting. What the creature was like after the metamorphosis was the grand secret. Whilst I was examining, putting fresh slices on the slide one after another without getting at anything farther than has already been described, almost blind with searching, and leaving the last slice of infested bud on the slide, I took a rest to recover clear vision preparatory to putting the things away clean and tidy, an imperative necessity in microscopic operations. Notwithstanding, I was not by any means satisfied; I knew the thing was there, only it would not come into view, therefore I took a last "fond look," and was rewarded, for a creature appeared as large as a woodlouse is to the naked eye under the same magnifying power as the four-legged mite, shown on page 321 at c, was subjected to, and it had eight legs. This is what I was in search of, a fertilised female capable of traversing the naturally hairy young growths of the Hazel, piercing the young buds, and depositing its eggs in them. The cycle is now complete. I cannot agree with Mr. Gibbon and Mr. Hiam that bud gall mites are all one species. The late Mr. Andrew Murray is very clear upon this point, and does not make one figure of a bud gall mite do service for five species. There is a difference between the Birch and Currant buds gall mites. True it is slight, and only an expert would notice what the difference is, but it is enough to show that the representation in books in many cases are mere copies, often of continental specimens, which are larger, if not better than ours, they are made to do duty for.

As regards the Pear leaf gall mite, I shall be pleased to examine any specimen Mr. Hiam may send, through the recognised channel. I may say, however, that I have worked out the life history of the Pear leaf mite, and in some points connected it with a certain form of canker, but I am not certain when and how the mites attack the wood and produce the cankerous affection. If Mr. Hiam will kindly send to the Editor specimen of the current year's growth with galls on the leaves early in June, similar specimen with two year old early in August, and similar specimen immediately before the leaves fall in autumn, I will see what I can make of them and report in the *Journal of Horticulture*. I have the specimen of the fertilised female Mr. Hiam submitted to the Editor in the spring of this year. Fresh specimen of these might be submitted for inspection between the fall of the leaves and the appearance of new growth.—G. ABBEY.

#### FRUIT PROSPECTS—INSECTS.

STRAWBERRIES look very well, but the drought will probably shorten the duration of the crop. Here we have had no rain sufficient to lay the dust since March 1st. Gooseberries a good crop. Black Currants very short. Red Currants good, though have fallen much in consequence of the dry weather. Plums and Cherries good at present, but they keep getting fewer. Apples and Pears very good. I do not think the cold winds while the fruit was in bloom have been injurious, for the old saying is, "A cold blow suits Cherry bloom," and according to my observation this is correct. The blossom seems less injured by frost when the weather is dry and cold.

With the cold winds and the dry weather insect pests are very numerous, particularly green fly and red spider. For the latter on Gooseberries we have till recently had no cure, as the usual washes do not kill it, and they walk about under hellebore powder with perfect indifference. As when once established it returns usually every year during hot, dry weather, bushes are much injured by it, and in a few years are worthless. Some growers here are having to grub a number of bushes through this. We have now found that the "Curative" wash applied about 1 in 20 kills them. For Gooseberry caterpillar we find nothing better than hellebore powder, which kills very quickly, but of course it must not be applied near gathering time. We have had an unusual visitation this year, and had to go over all our bushes, and as soon as we had been round another batch had arrived, and we had to go over the bushes again. Still insects must on no account be allowed to remain unchecked, or good-bye to fine fruit and heavy crops.—WALTER KRUSE, *Leeds, Kent*.

FRUIT prospects are fairly promising hereabouts, and if frosts be done with I think we shall have an all-round satisfactory crop. The long succession of bright days and frosty nights—except on the night of the 11th ult., when the bulk of half-opened blooms were killed—does not appear to have left us any other evil legacy, and would but the long-deferred rain in kindness remember us the year 1893 bids fair to be remunerative. Fortunately on that sharp night some two-thirds of the bloom took no harm, and as the weather since has been very satisfactory for pollen distribution, a sufficient "set" will still be secured. Our Vines and Peaches too I may say are highly satisfactory, and the thinning some three weeks earlier than usual will be finished this week. With the breezy bright weather Tomatoes are also setting well, and so far are, I think, healthier than usual.—JOSEPH WITHERSPOON, *Red Rose Vineries, Chester-le-Street, Co. Durham*.

THE unfortunately persistent dry weather, besides its other prejudicial gardening effects, has prematurely invited the Gooseberry caterpillar, and in many instances, as in my own garden, induced its appearance where it was never seen before. I thought of using dry flowers of sulphur, and with the best effects. I say dry, for if in the least damp it will be useless. Scatter it with a spraying canister wherever the caterpillars appear or may reasonably be expected, and the least touch immediately kills them. Now is the time, before the eggs are laid, and



before your Gooseberry bushes are defoliated. The loss of the foliage means worthless fruit and a crop of caterpillars next year.—W. J. MURPHY, *Clonmel*.

I AM pleased to record a break in the drought. On Monday, 15th inst., we had a thunder shower of half an hour's duration, in which 0.10 inch fell. We have a very good set of Apples and Pears, Cherries and Plums. Blight of all kinds is very prevalent. We have already sprayed our trees three times, once when in bloom with clean water, next with softsoap and petroleum, and lastly with carbolic soap and quassia.—ROBERT MAHER, *Yattendon Court Gardens, Newbury*.

### NEW PANSIES.

I HAVE recently had opportunities of inspecting the large collection of Pansies grown by Mr. W. Sydenham at Tamworth, on soil which suits them admirably—fresh loam on a newly broken up piece of pasture land, and the plants were strong and producing fine blooms. Some of these were seedlings raised by Mr. J. D. Stuart of Belfast, and other raisers, and several have not yet been sent out, but will be in the autumn should they maintain the promise at present held out of taking foremost rank. At the forthcoming great Midland meeting of the Midland Pansy Society at Tamworth a further opportunity will be offered of seeing them and many other new kinds, as raisers from Scotland, the North of Ireland, and other places will be present.

The following notes taken at the end of April of new sorts at Tamworth may be of interest to many Pansy growers—viz., Emmie Stuart, pale yellow with carmine markings, large very solid blotch, and of fine form; Mrs. Walter Fisher, white with rosy purple markings, solid blotch, and excellent form; Harry Thring, a Miss French style of flower, very rich in colour, and of the finest form. Mrs. Chadwick and Andrew Allison are both promising. Dorothy Gladwin is an improved My Lady. Tamworth Yellow has been very good, rich in colour, with a large dark solid blotch. Sunlight is a pretty flower, and Mrs. Willie has a fine blotch and is a good all-round flower. Emily Renk, Thomas Garrett, and Annie Garrett are all very pleasing useful exhibition flowers. Andrew Frater is a Scotch variety, a great acquisition, the upper petals marked with rosy carmine, with large solid blotch, and medium pale yellow margin. Emmeline is a fine flower, top petals rich crimson tinted mulberry shade, with grand solid large blotch, with gold and rosy crimson markings. The Rev. J. Gressly and Mrs. B. Dick are very promising. William Adam, rich gold ground with crimson maroon marking, and large solid blotch; Mrs. Thompson, and Mrs. Train are all acquisitions. Forbes's Miss Jessie Campbell is rich in colour, and his Mrs. Street is a good flower with large solid blotch. William Watson is truly a grand flower in every way, a light ground flower with a superb blotch. William Scott is an improved Mrs. Scott, white self with large dark solid blotch. Mrs. William Sydenham is very rich shaded deep crimson violet in colour, with dark blotch and white markings, and very distinct. May Spence and Betsy Kelly are also very pretty.

Of those already out, the following may be regarded as fair exhibition varieties, and very moderate in price—viz., Agnes Mormon, a fine light flower; William Caldwell, Mrs. Lister, Donald Morrison, Mrs. Hugh Weir, John Lamont, Lord Bute, Louis Wierter, Thomas Hastie, Mrs. Grossart, Mrs. Henderson, Julia Goodfellow, Lieut. McIsaac, Miss Helen Hunter, Mrs. C. L. Carnegie, John Coultts, Miss Hudson, Mrs. Patterson, Mrs. Fleming, Tom Travis, Weir's Hugh, Mr. Maxwell, Mrs. Taylor, Mrs. A. Irvine (a grand white self, with an almost black large blotch), Maggie Pinder, May Hynd, Mrs. W. Dean, Agnes Mabel, David Rennie, Dusty, Royal Arthur (style of Niel McKay, good blotch), Kayii, William Ross, William Evitts, Mrs. Hastie, Mrs. Atkinson, Kate McArthur, Maggie A. Scott, Joe, Clandeboys, Robert Craw, Archie Buchanan, Niel McKay. From these amateurs may safely select for additions to collections, as well as for forming one.—WILLIAM DEAN.

### THE SCOUNDREL SPARROW—THINNING.

IN answer to Mr. Arnott, I cannot see the connection between want of water and sparrows destroying Apple buds, for, as far as I can judge, they do not eat them, but simply pluck them off and let them fall. As a matter of fact a stream of open water runs through my grounds, and some of the buds I saw plucked off were actually falling into the water. We have a fine set of such Apple blossoms as were left, as well as of Pears, Plums, and wall fruit, with very little blister on the latter. Most of the crops will have to be thinned; and really, if the sparrows had thinned the blossoms instead of absolutely stripping some trees and leaving others, good instead of harm would have been done this year.

I remember that some good person or other, taking note of three successive operations on my Rose beds—thinning shoots, destroying grubs, and thinning buds—pointed out to me that if I left Nature alone the grubs would have done all this thinning for me. I requested him or her (the latter I fancy) to go and inspect certain Rose beds in another garden which had been left to the operations of Nature, and remarked that gardeners liked to do the thinning themselves. It was Mr. G. Paul, I think, who told me he once employed some women to thin the buds on some Rose plants for exhibition purposes. "Look here," said he, pulling off all the buds round the central one of a truss, "I want you to take off all these." They set to work with a will and left not a bud of any sort on the row!

Mr. Arnott says he pleads guilty to harbouring the sparrow, which at present has not molested him. I prophesy that for him, too, "a time will come." It is only when the sparrow *has* been harboured for a long time, and has therefore increased beyond reason, that he becomes a plague. A neighbour of mine has done an illegal act. He put down a little poison for the sparrows, and the next day picked up on his own premises—doubtless many more died further away—450! I am thoroughly opposed to the use of poison in any way or for anything if it can possibly be avoided, and only mention it to show that when sparrows have increased to such an extent they must be treated as vermin.—W. R. RAILLEM.

RELATIVE to the alleged depredations of "our birds," what would we think of a person censuring, because it might be his coat had been torn, those who had saved his life. Whilst poking into the bloom truss to secure the snugly ensconced caterpillar, the sparrow has been seen to drop a stray petal, and he is not only to be censured but he is to be utterly exterminated. How strange it is that the saying that "the murderer secures the nearest cut to heaven" is not only justified, but it is equally true that those who wish to be evilly spoken of have only to practise replacing evil with good to succeed. Since reading the recent bird paragraphs I have been thinking you, or any of your representatives, might do good service by visiting and reporting on a few places where the two extremes are practised, and let the results declare which are the ways of wisdom. I enclose you a slip on which you will find my views more fully, and with or against, I would be glad if you would give us a few lines of criticism. Red spider I see has made an attack on the Gooseberries, and so far I regret that we have not had time to attend to it.

Parent birds seek for their brood the best procurable food, but they will not fly half a mile for it if they can get it near at hand, and as a dog will eat grass for its good, so will birds devour green food if within their reach. For the protection of my one and a half acre of trees and fruit bushes, situated some 600 yards from the town, I have within the walls about twenty-five pairs of sparrows, and my Gooseberry bushes are never touched. As for sparrows eating the blooms I have as yet only heard of the performance. These are stern unattackable facts. During the first year after the serious frost previously referred to, I dusted my bushes with hellebore powder. Amid the shoals of dead caterpillars that lay under every bush, I discovered several dead sparrows which had evidently been killed by eating the poisoned pests, and so I had it proved conclusively that they did eat the Gooseberry caterpillar. I provide nesting places, and thus have birds so near my caterpillars and so far away from house morsels, that they eat the pest greedily; but fruit crops being thereby secured, we must next draw on our ingenuity to prevent the birds taking more than their fair tithe, and this can be done with nets.—J. WITHERSPOON.

[Our criticism will be brief. In some districts where sparrows abound it is a question of nets or no fruit if the birds are not otherwise dealt with. We have seen Gooseberry and Currant bushes ruined through being denuded of buds by sparrows when there were no caterpillars; at the same time we are always pleased to hear of cases where sparrows are so few, orderly, or well managed that they do more good than harm in gardens.]

### ANTIPODEAN APPLES—PACKING SCIONS.

YOUR correspondent, Mr. W. J. Palmer, The Nurseries, Carleton Gore Road, Auckland, New Zealand, in his remarks on Antipodean Apples (page 371) kindly offers to send to me a few young trees of Northern Spy Apple on their own roots. I should be pleased to receive them, and if at the same time Mr. Palmer is inclined to send any scions of new Antipodean varieties I should feel a pleasure in delivering them to Mr. Barron at the R.H.S. Gardens, Chiswick.—ROBERT MAHER, *The Gardens, Yattendon Court, Newbury, Berks*.

[We have from time to time received scions of fruit trees packed in various ways, for keeping them fresh during long journeys. Cherry scions from Australia, packed in slightly damp moss, then tightly enclosed in oiled silk, arrived in the best condition. They were buried in damp soil for a few days, as there was a slight suspicion of shrivelling. This freshened them, and all the varieties grew well when attached to the stocks. Oiled silk properly applied prevents the escape of moisture from the scions much better than any charcoal packing can do.]

### LONDON PURPLE AND GOOSEBERRY CATERPILLARS.

FOR some time past I have been troubled with the caterpillar upon my Gooseberry bushes, which threatened to destroy both fruit and leaves, and after trying various remedies to effect a cure I was compelled to resort to London purple—a preparation I have hitherto been very prejudiced against. Whenever I have used it before, it has burned the foliage of whatever I have tried it upon. Owing to this evil I had left off using it; but reading the other day the method of mixing given by a Frenchman it led me to make a further trial, which turned out a success, one application clearing the bushes of all caterpillars. I have accordingly dressed all my bushes, and in the course of forty-eight hours had the satisfaction of not finding a single caterpillar alive. Those who fear its use owing to the arsenic remaining on the fruit, have only to wash the Gooseberries as they gather them, or give the bushes a good syringing



with clear water in the event of us getting no rain. The strength and mode of mixing are as follows:—

Boil for ten minutes 4 lbs. of common sugar in 1 quart of water, stirring so as not to allow the sugar to burn; add 2 tablespoonfuls of this syrup to 2 teaspoonfuls of London purple, make into a paste, allow to stand for half an hour, add to 3 gallons of water well stir; slightly dew the bushes with a sprayer, and in the course of a few hours they will be freed from the pest.—E. WALLIS, *The Gardens, Hamels Park, Buntingford, Herts.*



**EVENTS OF THE WEEK.**—A special show of Orchids, cut flowers, and fruit will open to-day (Thursday) at the Gardening and Forestry Exhibition, Earl's Court, and continues the following day. On Friday, the 19th, an exhibition of Orchids and other plants will be opened at the Botanical Gardens, Manchester, this continuing until the following Thursday, on which day the Temple Show of the Royal Horticultural Society opens.

— **THE WEATHER IN LONDON.**—After a prolonged spell of drought (73 days) a welcome change has taken place. On Monday a slight shower fell in and around the metropolis, but not sufficient to do any material good to the crops. On Tuesday, however, several showers occurred, and during the night it rained heavily at times. As we are going to press it is close and cloudy, with every appearance of rain.

— **WEATHER IN THE NORTH.**—Summer weather has prevailed throughout the past week, with an occasional chilliness in the evening from the wind veering into the N.E. There has been a shower during the past night. This morning (16th) is dull, and the barometer is falling slightly. The much-needed rain seems to be coming.—B. D., *Perthshire.*

— **PRESENTATION PORTRAIT OF MR. HARRY J. VEITCH.**—It will be remembered that the gardeners of the United Kingdom presented to Mr. and Mrs. Harry J. Veitch a silver dessert service, also a case of silver dessert and fish knives and forks on the occasion of the twenty-fifth anniversary of their marriage on the 6th of August last. It may also be remembered that it was decided to present Mrs. Veitch with an oil painting of her husband as soon as it could be completed. Mr. George Clausen, an artist of public repute, was entrusted with the work. It has been a long time in progress, but will be completed this week. On Monday next the portrait will be on view in the nurseries at Chelsea, and continue open to inspection for some little time, including the Temple Show week, when it may be expected that many gardeners will visit the metropolis. Those who call at Chelsea, and all are welcome, will find a life-like delineation of Mr. Veitch, uniform with and worthy of a place among portraits of his father, grandfather, and great-grandfather which hang in the room.

— **THE TEMPLE FLOWER SHOW.**—We are informed that all arrangements have been made for the Show to be held on Thursday and Friday, May 25th and 26th. Intending exhibitors are requested to give notice of their exhibits immediately to the Society's Superintendent, Chiswick Gardens, who will arrange for the requisite space being allotted. Exhibitors' names, if received in time, will appear in the special catalogue of the Show. The Council have arranged that gardeners (*i.e.*, *bonâ fide* employés in a private garden, nursery, market garden, or seed establishment) may obtain 2s. 6d. tickets for 1s., which will admit them to the Exhibition at ten o'clock on Friday morning, May 26th. These tickets can only be obtained previous to May 24th from the Society's Office, 117, Victoria Street, S.W., and a stamped and directed envelope must be sent with postal orders in every case.

— **MORISIA HYPOGÆA.**—One of the prettiest plants now in bloom on the rockwork at Kew is this Crucifer. The flowers are yellow, set thickly amidst the leafage, the which though smaller bears resemblance to that of the American Cress. The plants are mere tufts, some 2 inches in height, and really a beautiful little thing for rock corners. It is a native of Sardinia, and may be propagated by seed or by cuttings or by division.—D.

— **THE ROYAL GARDENERS' ORPHAN FUND.**—At the monthly meeting of the Committee which took place at the Horticultural Club recently, the Hon. Secretary announced that the dinner receipts amounted to £492 6s. 6d., in addition to the promise of £100 from the directors of the Gardening and Forestry Exhibition at Earl's Court.

— **BOTANICAL APPOINTMENT.**—We understand that Professor Mobius, of Hiedelburg, has been selected to succeed the late Dr. Jannicke as second librarian and Professor of Botany at the Senckenberg Institute, Frankfort-on-the-Maine.

— **GARDENING APPOINTMENTS.**—Mr. Hy. Watt, for the last twelve years head gardener to G. L. Watson, Esq., Rockingham Castle, Northants, has succeeded Mr. Gilbert as head gardener to the Right Honourable the Earl of Ancaster, Normanton Park, Stamford.

— **THE "KEW BULLETIN"** for February and March contains, as usual, much information. The part opens with an instructive article on the Palm Weevil in British Honduras, accompanied with two plates. There are also "decade 5" of new Orchids, and a number of miscellaneous notes from which we extract the following three paragraphs.

— **KEW APPOINTMENTS.**—Mr. Gustav Hermann Krumbiegel, a sub-foreman in the Royal Gardens, has been appointed Superintendent of the State Gardens under the Government of His Highness the Maharaja Gaekwar of Baroda, in the Bombay Presidency. Mr. Frederick Enos Willey, in the employ of the Royal Gardens, has been appointed Acting Curator of the Botanical Station at Aburi, under the Government of the Gold Coast, during the absence on leave of Mr. W. Crowther.

— **MELHANIA ERYTHROXYLON (AIT).**—This is the Redwood of St. Helena, an endemic tree 20 feet high, bearing large tubular flowers, white when first expanding, changing in a day or two to pink, and finally to red. It is now almost extinct in the island. In 1883 Mr. Morris, the Assistant Director of Kew, when on a visit to St. Helena, brought home seeds of this plant, which were widely distributed. Plants were successfully grown at Jamaica and put out at the Hill Garden attached to the Government Cinchona Plantations. It is doubtful, however, whether any of them have since survived, as the tree is, evidently, difficult to grow under cultivation to a mature state. One of the last of the plants raised from the same seed at Kew was killed during the winter of 1891. It would be interesting to learn whether the tree has been successfully grown elsewhere outside St. Helena. In order to make further trial of its application for a good supply of seed was made a short time ago to Mr. W. Grey Wilson, C.M.G., Governor of St. Helena. This was obligingly sent in November last, and a portion was at once distributed to the following botanical gardens—viz., Berlin, Edinburgh, Glasnevin, Paris, Antigua (Leeward Islands), Hakgala (Ceylon), Jamaica, Natal, Port Elizabeth, Sydney, Trinidad, and to T. Hanbury, Esq., at Mentone. The seeds sown at Kew germinated in a few days, and there are now numerous healthy young plants.

— **CALIFORNIAN PLANTS.**—Kew is indebted to Professor E. L. Greene of the University of California for a parcel of about 300 dried plants from Western Northern America, mostly from California, and largely consisting of types of novelties described by him from time to time. The specimens are excellent, and form a valuable addition to the Herbarium.

— **TULIP PICOTEE.**—This charming Tulip was referred to on page 374, last week. The flowers are largely grown for sale in bunches. Mr. Ware, jun., of Bath, son of the well-known Mr. Thos. Ware of Tottenham, grows thousands of blooms for market, and other beautiful varieties, which are comparatively little known. Golden Eagle, rich deep yellow, also referred to last week, will become very popular. The old Tulipa Gesneriana, the parent of the modern late-flowering florists' Tulip, is amongst our brightest and handsomest early flowering bulbous plants, and as it is so cheap no garden should be without it.—W. D.

— **SYRINGA JOSIKÆA.**—Lovers of hardy flowering shrubs should make a note of this pretty Lilac. It seems to stand the hot, dry weather better than the common kinds. I saw a dwarf bush of this flowering at the Durdans, Epsom, last week. It appears to grow freely in light, dry soil. The flowers are of a deep colour, and I should think stand longer than the common one owing to their firm texture. It is by no means a new variety, for I see it was introduced from Germany as far back as 1833. Still it is by no means common, and should not be lost sight of among the host of newer varieties.—J. SMITH, *Mentmore Bucks.*



— **HORTICULTURAL CLUB.**—We understand that it has been decided to have a special dinner of the Club on Thursday, the 25th inst., the first day of the Temple Show of the Royal Horticultural Society. The experiment was tried last year, and it was so great a success that the Committee have decided to hold one this year.

— **BEGONIA ARTHUR MALLET.**—This is a great favourite in the market, because of the rich red colour of its leafage. It belongs to the shrubby section, and may be propagated by cuttings. Specially for vase or sideboard decoration is this Begonia suitable, for the foliage is singularly effective.—A.

— **LINUM PERENNE.**—As growing in the herbaceous garden at Kew this is a rarely seen charming hardy perennial plant of the usual Linum character, from 15 to 18 inches in height, and carrying profusely lavender blue cup-shaped flowers. This is a hardy plant that merits much wider cultivation.—D.

— **THE WEATHER IN WEST YORKSHIRE.**—Rain fell in this district (Bingley) on the 16th inst. after a long period of dry weather. Terraces and slopes present in some places a parched and brown appearance, similar to the summer of 1887. Apples and Pears in orchards have set remarkably well, although the long-continued spell of drought has caused wall trees to shed a portion of their blooms.—T. H. B.

— **HEAT AND DROUGHT IN HANTS.**—Mr. E. Molyneux informs us that another week has passed without rain, and that the thermometer registered 89° in the shade last Saturday, the minimum night temperature being 50°. On mentioning this to a gentleman who is interested in these matters he observed:—"Perhaps Mr. Molyneux's thermometer is a little hotter than the weather." Has it been tested throughout the whole of the scale?

— **FLORA OF KENT.**—According to *Nature*, Mr. Frederick J. Hanbury and the Rev. E. S. Marshall are engaged in the preparation of a Flora of Kent, which should prove an exceptionally rich county flora, though some districts have as yet been but imperfectly searched. Any assistance will be gladly received by the Rev. E. S. Marshall, Milford Vicarage, Godalming.

— **CANADIAN FLOWERS.**—From the same source we learn that Mr. A. T. Drummond has been investigating the colours of flowers in Ontario and Quebec in relation to the time of flowering, and has contributed to the "Canadian Record of Science" an interesting paper on the subject. He finds that April, May, and even June and July are remarkable for the prevalence of white flowers. July and especially August of yellow, and September and October of purple and blue.

— **BEDDED-OUT DANDELIONS.**—In one of the flower beds at Kew is a number of Dandelions planted out regularly and thinly, but when I saw them the plants were out of flower. The variety was the common *Taraxacum officinale*, and seemed closely to resemble what Mr. Vilmorin, in "The Vegetable Garden," terms Very Early Dandelion. Probably good reasons can be given for the careful culture of these weeds at Kew in this way, but ordinarily they are a terrible pest.—D.

— **SWEET PEAS IN MAY.**—The value of Sweet Peas in May cannot well be overrated where cut flowers are much in demand. Their popularity, which is always of the fullest, is considerably extended when they are produced out of their ordinary season earlier or later. Our plants now in bloom were raised from seed sown in small 60-pots in January, and when they had made some growth were shifted into 5½-inch sizes, and stood on a shelf close to the glass, where the growth produced was sturdy and strong. Directly they began to "run" freely a narrow border at the back of a cool house was prepared by digging into the existing soil, which Tomatoes had previously occupied, some decayed manure. Some twiggy shoots of the Snowberry served as stakes, with the addition, when they had attained a good height, of string strained so as to keep them from falling about. Less than two dozen pots were thus treated, but many dozens of their sprays have already been gathered, and they certainly bid fair to continue until others forwarded in pots and planted in the open will be ready for gathering. They are particular favourites in the cut flower vases, in the house, and having space at command advantage was taken of it to obtain a lengthened season of their delicate coloured and sweetly scented blossoms. They are stimulated by liquid manure in weak doses, and are not allowed to suffer from want of root moisture. They stand about 7 feet in height, and are branching freely from almost every joint.—W. STRUGNELL, *Road Ashton Gardens.*

— **AN ODD COMBINATION.**—A large round clump of *Araucarias* at Kew, the trees, as all know, of the stiffest, most formal, and heaviest coloured description, had the other day a very beautiful carpet of blue *Scillas*. Nothing perhaps could be less in harmony than these two things, but the *Squills* are always beautiful, whether seen in woodland glades or in such quaint company as at Kew.—A.

— **THE MISTLETOE**, which has so long been shipped every year in such large quantities from France to England, will be more difficult to find next winter. That which was sent across the Channel came almost exclusively from the orchards of Normandy, where it flourished on the Apple trees. The French Government, says a daily contemporary, has decided that all the Mistletoe must be cut off the Apple trees at once on the ground that it sucks the sap of the trees and impoverishes them.

— **LAWNS AT THE IMPERIAL INSTITUTE.**—We take the liberty of directing your attention to the fact that the beautiful bright green lawns at the Imperial Institute were sown with our lawn seeds, and we shall be glad if you can find room for a notice respecting this in an early issue of your Journal.—SUTTON & SONS. [We have not had the pleasure of seeing these lawns, but the majority that have come under our notice in various parts of the country are disappointingly brown through the continued drought.]

— **COTONEASTER HORIZONTALIS.**—For training against a wall I know of no more charming plant than this, the natural growth of which lends itself so admirably to this purpose. It grows freely, although the foliage is small, and the growth is perfectly flat, each branch having a fan-like appearance. Established plants are now in bloom, with a profusion of miniature pinkish white flowers, probably to be followed by berries, but as I have not seen it in a berried state I am unable to say for certainty. It is, however, a plant to be sought after, and one of the most beautiful wall-covering shrubs we have.—W. D.

— **EVERLASTING PEAS.**—So much attention is given to the tall-growing forms of *Lathyrus*, that so pleasing a trailer as *Lathyrus hirsutus*, as seen on the rockwork at Kew, is frequently overlooked. That it does very well and is quite hardy is evident; growths range about 12 inches long, carrying small clusters of from three to four small flowers, the standards mauve and the tips nearly white. A pretty member of the Leguminose family, but stiffer in growth and rather more compact, is *Ononis rotundifolia*, quite a pretty perennial Vetch, flowers borne in small clusters, and of a reddish-pink colour.—D.

— **EARLY PEAS AND POTATOES.**—We gathered our first dish of Suttons' Ringleader Pea on the 15th inst., from seed sown in the open air on the 26th of January. This is the earliest date we have gathered Peas here during the last eighteen years. Chelsea Gem, sown at the same time side by side, will not be ready for another week. Veitch's Early Ashleaf Potatoes, planted out of a box between the Peas on the 7th of March, are now in flower, and will be ready for use next week. Laxton's Noble Strawberry, growing on a south border, will be ready in a few days. The Peas and Potatoes are growing on a border fully protected from the east winds.—J. SMITH, *Mentmore, Bucks.*

— **'CUTE SPARROWS.**—We hear a good deal about sparrows, and their ways; but our birds are behind the times in comparison with some over the water. An American paper says:—"A man fed his fowls upon rice, but, finding that the house sparrows dropped down in clouds and robbed the poultry of most of their food, determined to get the better of them, and substituted maize. He was astonished to observe that the sparrows, finding the grains too large to swallow, carried them to an adjacent railway line, and waited for the train to pass by, when they were enabled to pick up the crushed meal." "W. R. Raillem" would surely "hesitate to shoot" such smart birds as these.

— **CYRTODERA REFULGENS.**—When some of the Belfast florists were over here recently one of them in the flower market remarked that the only novelty he had seen there was this plant. That may have been an exaggeration, but doubtless market growers are much puzzled to find real novelties. I saw it growing largely in Messrs. Bruckhaus and Melling's little nursery at Twickenham the other day. The plants have a dwarf, somewhat creeping habit, throwing out runners like *Saxifraga tormentosa*, but the foliage is of a reddish velvety nature, and the flowers bright scarlet in colour and close set in the foliage, and not unlike those of a giant Musk in form. It makes a pretty basket or vase plant.—A.



— WINTER COS LETTUCES.—There seems even still to be some doubt as to the relative value of white and black-seeded Bath Cos Lettuces for winter work. Really both these varieties are suitable only for planting at the base of south or west walls in the autumn to stand the winter, as if some are to be wintered in frames any good white Cos is best. The white-seeded Bath Cos is perhaps the hardier, but is a spreading form that needs much tying. The black-seeded has darker leafage, and grows erect, hearting-in naturally. Probably a good stock of hardy Green Cos is as good as either of these for exposed winter growth.—D.

— ROYAL BOTANIC SOCIETY.—The second of the series of annual lectures given at the gardens of the Society took place May 12th, when Professor Groves, F.L.S., dealt in a popular manner with the "Life History of Ferns." Tracing the formation of Fern spores from the first slight swelling upon the under side of the mature frond, to the production of the perfect sori or case, with its countless dust-like spores, the lecturer briefly sketched their further development, first as small green leaf-like bodies lying flat upon the soil, through the subsequent formation and fertilisation of other spores arising from them, to the second and final birth of the infant Fern. This "alternation of generation," as it is called, is that which divides Ferns from flowering plants, for while true seeds when planted grow at once into the likeness of their parents, Fern spores have to pass an intermediate existence before they reach the same stage.

— THE WAKEFIELD PAXTON SOCIETY.—At a recent meeting of this Society Mr. Bott gave a very interesting paper on "Nature's Notes." At great length and with much lucidity he described the marvellous contrivances by which Nature effects the elaboration and protection of buds of various trees, and then expounded in detail the functions of leaves and flowers in the economy of plant life. Taking his audience on an imaginary rural ramble, Mr. Bott noted the wonderful wealth of vegetation that a grass field or a plantation possesses for the investigation of an observant eye, and remarked that our English woodlands and dales were not to be excelled or equalled in this respect even by tropical climes. All Mr. Bott's descriptions were clothed in graphic and poetic language, and evinced how keen an appreciation he has for the riches of our botanical surroundings, of which so many people are utterly oblivious.

— DOUBLE PYRETHRUMS.—Few plants requiring such simple culture are more useful and showy than these. Like the whole genus they will grow fairly well in almost any soil, but still they repay liberal treatment under such conditions. Their showy flowers come much finer, and the footstalks which support them are of greater length, while the Fern-like foliage is improved by growing stronger, and thus breaking away from the cushion-like form of weaker clumps. They look exceedingly well when planted either in beds, borders, or lines, and may be termed almost continuous summer bloomers, for if the flowers are cut for use as soon as they have expanded, or, when not required for that purpose, removed as soon as their beauty is over, others are quickly produced. When it is desirable to increase the stock the clumps should be lifted every alternate year in October or February, divided into pieces having two or three crowns and replanted. The following are excellent varieties:—Album plenum, white; Captain Nares, bright crimson; Dr. Livingstone, flesh colour; Duchess of Edinburgh, mauve; Marquis of Bute, reddish crimson; Mont Blanc, the best white; J. R. Tweedy, brilliant red; and Nancy, blush white, yellow centre.—H. D.

— TULIPS AT KEW.—Walking through Kew Gardens last week I noticed some brilliant beds of Tulips near the lake, and seeing that they were all named I began to take notes of the best, beginning with a couple of beds of mixed varieties, which, though getting over, were very beautiful. Then I stepped on to the grass to note *Tulipa micropelia*, rich purple scarlet; *T. fulgens*, having long broadly expanded pointed petals of a reddish crimson; and *T. spathulata*, not unlike *Gesneriana*, but larger, when I was hailed by a man wearing a uniform, and rudely told to get off the grass. I mildly remonstrated that as the Tulips were labelled for the information of the public I was but getting a few names. But no, off I had to come, although no notice was posted, so far as I saw, that I was interdicted from going on to the grass. I regarded the method of hailing me as most offensive, and would ask the Kew authorities to instruct their keepers to be rather more courteous, especially when they see anyone taking notes. A courteous remark that getting on to the grass there (it is not forbidden elsewhere in the gardens) was contrary to regulation would have been as courteously regarded.—A. D.

— FLOWERS IN LONDON.—Even in our smoke-begrimed city, and in quarters where one would least expect to see any such oases, one's eyes are gladdened every now and again by the sight of many a pleasant little garden plot that is nurtured by its owner with all the loving care that a resident in the suburbs bestows upon his little "estate." Only the other day, in a retired nook leading out of Bartholomew Close, says a correspondent in the *City Press*, I was shown quite a little picture in the way of cultivation. The plot in point is about 2 yards square, and is hemmed in on all sides with factories, and yet, thanks to the care the owner bestows upon it, the passer-by is given the sight of a thick clump of Lilies of the Valley, each plant being crowded with blooms. The cottages around are also gay with Pelargoniums and other plants that flourish under adverse circumstances.

— THE WEATHER DURING APRIL AT RIPLEY, YORKS.—April was a very bright dry month. There were twenty-two bright days; on four days the sun shone at intervals, and four dull days. The total rainfall amounted to 0.69 of an inch, which fell upon six days, the greatest daily fall being 0.26 on the 16th. Mean reading of barometer 30.26. Mean maximum temperature 59.6°. Mean minimum temperature 33.2°. Mean temperature of month 46.4°. Highest maximum temperature 75° on 24th, lowest minimum temperature 22° on 12th and 14th. As I write (May 11th) there is still no sign of the much-needed rain, and shallow-rooting subjects are quite at a standstill, though the deeper rooting occupants of plots and borders do not show any signs of suffering at present. Aphides are on Plums and Cherries, also caterpillars on Apricots and Pears are very abundant, entailing a deal of hand-picking and syringing with soapy water, else from their numbers they would have worked considerable mischief.—J. TUNNINGTON, *Ripley Castle Gardens*.

— GRIMWOOD V. WEEKS.—An action was brought in the Chancery Division on the 13th inst. by the executors of a deceased partner (Mr. George Deal) against the surviving partners, composing the firm of Messrs. J. Weeks & Co., Horticultural Builders, Chelsea, asking that the partnership affairs should be wound up. The object of the action was to ascertain what were the rights of the parties according to the true construction of a somewhat loosely drawn indenture deed. To this end several points were raised. The first was whether or not the defendants were entitled to take over the share of the deceased partner at a valuation. His Lordship said the matter seemed a somewhat complicated one. As the parties were agreed as to the amount of the share, why should they not settle by arbitration the amount payable, with interest at 5 per cent. on the first portion to run from the death of Mrs. Weeks in 1891? Mr. Chadwyck Healey stated the defendants would like to pay down the whole sum due. It was eventually agreed that an account should be taken of the deferred portion of the assets, with interest at 5 per cent. from the date of the death of Mrs. Weeks, to be paid within one month after the amount was ascertained, together with the sum due on the account to March 31st, 1885, with interest from the death of Mr. Deal, defendants to have liberty to pay not less than £2000 at any time; and no costs to be allowed on either side.



#### ORCHIDS AT MARK'S TEY.

MESSRS. FRED. HORSMAN & Co.'s Orchid nursery is situated near the station at Mark's Tey, a few miles from Colchester. The firm is specially celebrated for a fine strain of *Odontoglossum crispum*, collected under the supervision of Mr. John Carder, and as another consignment is to hand from him it is not surprising to find thousands of that species lying about the houses and packing sheds. Many of the masses are of an enormous size. Other imported Orchids in large numbers are *O. citrosimum*, *Lælia albida*, *Epidendrum vitellinum majus*, *Schomburgkia rosea* and *Chysis*.

The established plants are in a healthy condition. They are mostly in long, low, span-roofed houses, arranged on stages covered with coal ashes. The ventilation and shading appears to be perfect. Openings are provided in the walls for the air to enter beneath the stages both above and below the hot-water pipes. The shading is home-made, of lath, similar to the Parisian blinds. These are what



a writer described as the very worst kind of shading, but I have used them now continually for nearly twelve years, and consider them the best of all shading for Orchid houses. A nurseryman would not adopt them in preference to any other if they were not good.

Numerous plants are in flower, and others are approaching that stage, including some grand plants of *Cattleya Mendeli*, *C. Mossiæ*, and *Lælia purpurata*. An amateur would watch the expanding flowers of these with much interest, knowing that they all come from the best districts, and the majority have not bloomed before in this country. *Cattleya gigas*, *C. citrina*, *Lælia flava*, *L. furfuracea*, and *Dendrobium Jamesianum* are remarkable for fine healthy appearance, growing quite close to the roof glass. *Cattleya Aclandiae* is also at home under similar treatment. In one house is a fine collection of hardy *Cypripediums*. *C. acaule* is represented by many plants in full bloom, and specimens of *C. spectabile* are very strong, and will soon be in flower.

There are many valuable and rare species and varieties in this establishment, and a visit to Mr. Horsman's is enjoyable at any time. He has always something new or of interest to show, and to impart sound information to those who seek it.—G. W. CUMMINS.

#### NEW DENDROBIUMS.

**DENDROBIUM WARDIANUM ALBUM** obtained a first-class certificate recently, and deserved it. The pure white of the sepals and petals and the delicate markings of the lip, which had the yellow blotches, but only a faint indication of the maroon eye-like spots found in the type in a flower of full size, place this among the choicest of the forms of this fine species. It was shown by Mr. W. R. Lee of Audenshaw. *D. Bryan* was raised by Mr. Cookson from *D. luteolum* and *D. Wardianum*, and it obtained a first-class certificate when shown in flower. Mr. Cookson's hybrids are as a rule of first-rate merit, and this is no exception. It has slender stems 2 feet high, primrose coloured flowers

with purple tipped sepals, and a red-brown blotch and lines on the large lip.

*D. Sybil* is another of Mr. Cookson's hybrids, raised from *D. bigibbum* and *D. Linawianum*. It has the general habit of *D. nobile*, to which *D. Linawianum* is closely allied. The flowers have deep purple sepals, purple and white petals, the lip white, with blotches of

yellow and crimson. It obtained a certificate. *D. Benita*, a hybrid between *D. aureum* and *D. Falconeri*, was raised by Mr. Brymer, M.P. Its flowers, which are nearly 4 ins. across, are very similar to those of *D. Ainsworthi*, which was raised from the same parents.—W. WATSON (in *Garden & Forest*).

#### PHAIUS MACULATUS.

THIS is a most handsome *Phaius*, and one that is not so extensively grown as it might be. The illustration (fig. 72) portrays the beauty of *Phaius maculatus*. The flowers are from 2 to 3 inches across, of a soft yellow colour, except the middle lobe of the lip, which is marked with reddish brown, and they are produced in racemes of ten or twelve on scapes about 2 feet in height. In addition this *Phaius* has variegated foliage, the dark green leaves which are nearly 2 feet in length being spotted with yellow.

#### AERIDES PLATYCHILUM.

THIS distinct and pretty *Aerides* flowered with Mr. F. W. Moore, Glasnevin Botanic Gardens, Dublin, in April, 1892, when it was sent to Kew for determination. Nothing, says the "Kew Bulletin," is known of its native country. It

is allied to *A. Houlettianum*, *Rehb. f.*, having similar colours and a very sharply reflexed spur, but the lip is flat, not plicate, and the side lobes are free for less than half their length, not divided nearly to the base and spreading. The sepals and petals are light buff, with a faint purple stain near the tips. The lip is flat or slightly convex, pale yellowish white, the side lobes transversely barred with light purple, the front one with the middle and apex bright purple, and a few similar spots on the sides. The spur is buff pink. It is an interesting addition to the genus



FIG. 72.—PHAIUS MACULATUS.





## PORTSMOUTH CHRYSANTHEMUM SHOW.

WE have received the schedule of the next autumn Show, which opens on October 31st and closes on November 2nd. The Portsmouth shows of the past have been among the earliest, largest, and best in the kingdom, and the next may be expected to equal its predecessors. The leading class is the usual mixed, and of forty-eight blooms in thirty-six varieties, and the five prizes offered, of £10, £7, £5, £3, and £1 10s., should bring out good competition. The stands of single Chrysanthemums are invariably attractive at Portsmouth—the finest we have seen. The bunches are limited to three blooms. The fimbriate class is also effective, the blooms being arranged in the same way as singles. Good prizes are also provided for plants as well as in the fruit section of the Show. The Portsmouth November Shows are highly popular and attended by crowds of visitors. Mr. F. Power is the Honorary Secretary, and does all things well.

## SEASONABLE NOTES ON CHRYSANTHEMUMS.

THE majority of the plants for large blooms will now be occupying a position out of doors, although if it were possible I should prefer that they have the shelter of a cold frame for a couple of weeks yet; removing the lights entirely during fine and warm weather, but having them handy in case of frost, or cold east wind, where the plants are at all exposed to it. In my case it is necessary to provide temporary shelter by means of thatched hurdles for several weeks, while the wind remains in the east. Plants that are exposed are liable to have the foliage changed in colour to a pale hue by a prevalence of cold wind, which is not at all conducive to their welfare. This paleness in the colour of the foliage is very much aggravated if water is drawn direct from water companies' pipes, underground tanks, or wells, and given to the roots without first warming it, either by exposure to the sun in uncovered tanks or mixing with it hot water. It is surprising how quickly such an apparently small matter as the above will affect the colour of the leaves and with that the general health of the plants.

Plants grown without topping are now making what is known as the "first break," which is simply a transition from the singlestem to a new set of branches by natural means, caused by the formation of a flower bud at the point of the shoot, causing a temporary check to progress. This bud must be promptly removed and the requisite number of shoots selected, so that the whole energy of the plant will be concentrated in their progress for the future production of blooms. The orthodox number for each plant to develop thoroughly is three. In some instances where the blooms are small four are not too many, neither need the plants be restricted to less than three. It is at the "first break" stage that the number is decided upon, as but one to each shoot is allowed to develop; all surplus growth ought to be removed directly the most promising growths can be discerned. Some cultivators practise the topping plan on certain varieties and with very good results in the Japanese section, as for instance Mrs. Falconer Jameson, Mrs. Alpheus Hardy, and Stanstead White at times. The two former do not bloom quite at the right time in some districts, when managed on the orthodox method of allowing the plants to make their natural breaks. I would, however, caution cultivators with limited experience upon the topping principle. So much depends upon the weather that the plan is a risky one where the best results are desired. In the case of the incurved section I cannot advocate the topping principle at all. Plants require a longer season of growth in certain stages than the topping allows to enable the blooms to be developed deep and solid in "build." The recent hot weather has induced many plants to form flower buds too freely. The "Queen" family is particularly liable to this fault, so much so that many plants are rendered quite useless by the persistent manner in which the buds are formed, not only in the leading shoot, but the side branches are also affected in the same way. It is most difficult to account for this defect in culture beyond the reason given. The only remedy that I know of is to cut the plants down close to the soil with a view of inducing them to throw up another shoot. In many cases this will also set a flower bud before it is 6 inches long.

The plants are now in 5½-inch pots, and mainly are full of roots, quite ready for their final shift. Where a slight delay must take place before repotting can be done it is wise to supply the roots with weak liquid manure occasionally, with a view of stimulating the plants in the absence of more root space.

Preparing the soil for the last potting is a matter requiring some thought. No time should be lost in getting it ready, so that the manurial matter may thoroughly permeate through the whole of it. As a rule where bone manure is employed in the compost it is not mixed with the soil early enough to give off its manurial properties. Loam should form the principal ingredient, and it ought to be fibry. If it is taken from the surface of heavy land, partly decayed leaves, charcoal, wood ashes, and horse droppings ought to be freely used with a view to keeping the whole porous. Loam inclined to be sandy needs less of these materials, although wood ashes are good even for that class of

soil. Where turf is cut from poor land like that found on the downs in some districts it needs considerable assistance, either by the aid of animal or chemical manures. The latter may be used at the rate of from 2 lbs. to 3 lbs. to every bushel of compost, according to their individual strength.

A capital addition to poor turf is liquid manure, thoroughly saturating the turf some time before using it. Where obtainable cow manure in a half-decayed state is perhaps the best for light soil, horse manure being better for heavy loam as it tends to lighten it. Chrysanthemums require such a quantity of water at their roots during nearly all stages of their growth, that it is absolutely essential that the compost is made porous. Lime is necessary in some form or other, as soil deficient of calcareous matter is not likely to produce the best blooms. A handful of lime thrown on the turf occasionally when stacking it will not only supply a want, but is useful in destroying worms in the soil. Pounded oyster shells supply to an extent the want of lime in the soil. The turf I employ is wholly taken from a chalk subsoil, and to this fact—the presence of lime in quantity—I attribute the success in obtaining blooms of great depth and solidity.

Many persons make a mistake in the use of animal manures mixed with soil. It is too often the practice to advise the use of thoroughly decayed manure. This is wrong, because what beneficent properties can there possibly be in manure when decomposition has entirely taken place? The best way to prepare this manure is as if for a Mushroom bed, removing, of course, the greater part of the straw. It is sweetened, yet the ammonia is retained. To three parts of turf add one part of manure, half a part of decayed leaves, wood ashes and charcoal at the rate of one-sixth part, and artificial manure in addition at the rate named.—E. MOLYNEUX.

## THE GARDENING AND FORESTRY EXHIBITION.

## THE INAUGURAL CEREMONY.

IN beautiful weather the Gardening and Forestry Exhibition at Earl's Court was opened on Saturday, May 13th, by H.R.H. the Duke of York, K.G. As is usual on such occasions, the inaugural ceremony was of a brilliant character, the huge Exhibition buildings being most elaborately decorated. A large crowd assembled to meet the Royal visitor, who arrived about one o'clock, accompanied by General Sir Francis de Winton, the Marquis and Marchioness of Salisbury, the Thakûr and Ranec Sahib of Gondal, the Lord Mayor of London and Lady Mayoress, and Cardinal Vaughan. The following, amongst other nobility and gentry, had also accepted invitations:—

The Marquis and Marchioness of Lothian, the Earl and Countess of Denbigh, the Earl of Haddington, the Earl and Countess Manvers, Viscount Powerscourt, Viscount Gort and Hon. Miss Vereker, the Lady Mayoress of Dublin, Hon. Mark Napier, M.P., and Mrs. Napier, Baron and Baroness de Reuter, Sir W. G. S. Vesey FitzGerald, Baron George de Reuter, Sir Richard Temple, M.P., and Miss Temple, Sir James Linton, P.R.I., Sir William Henry Flower and Lady Flower, Sir Charles Tupper and Lady Tupper, Sir Saul Samuel and Lady Samuel, Sir Charles Mills, Sir James F. Garrick and Lady Garrick, Lieut.-General Sir Andrew Clarke, Sir John C. Bray and Lady Bray, Sir Malcolm Fraser, Sir John Heron Maxwell and Lady Heron Maxwell, Sir Edward and Lady Braddon, Sir Algernon Borthwick and Lady Borthwick, Sir Walter Buller and Miss Buller, Sir Edmund Lechmere, M.P., and Lady Lechmere, Sir Joseph Hooker and Lady Hooker, Sir E. M. Shaw and Miss Shaw. Mr. H. E. Milner (Chairman of the Executive), Mr. Cadell (late of the Indian Forest Department), Mr. Harry Turner, and Mr. G. A. Loveday (Secretary) were also in attendance.

When the Duke of York reached the dais in the centre of building Mr. Milner advanced to the steps and read an address of welcome, in which the objects of the Exhibition were declared to be instructive and wholesome enjoyment, in which the study of forestry and gardening might be pursued amid such auxiliary attractions as good music and light and pleasant surroundings might afford. Reference was made to the sympathy which the Prince of Wales has shown in every movement conducive to the welfare and happiness of all classes, and there was much applause when Mr. Milner read the concluding words of the address, which alluded to the approaching marriage of His Royal Highness and Princess May.

The Duke of York in reply said: Mr. Milner, I thank you for your kind address, and I glad to come here to-day to open this Exhibition. It has for its object the instruction and enjoyment of all classes. The promotion of the love of gardening and the better knowledge of forestry are subjects of importance, and I am sure that your Exhibition will have a beneficial effect by drawing the attention of the public to these useful pursuits. I thank you for your kind allusion to my father, which I know will please him. In conclusion, I feel deeply touched by the congratulations you have offered me on my approaching marriage, and it is indeed a source of great gratification to both Princess May and myself that the announcement of our engagement has been so kindly received by all classes throughout the country.

A daughter of Mr. Dodson, of the Board of Directors, then came forward to present the Duke with a white Rose. Then the Prince passed through the great covered in garden which leads to the Exhibition grounds, and after a brief inspection of the flower Show, took his departure.

## THE FLOWER SHOW.

The majority of the exhibits at the special flower show, which was held in connection with the opening of the Exhibition, were staged in a



large marquee erected in the grounds. In many respects this is a decided improvement upon the arrangements that were made at the Earl's Court Exhibition last year, and the innovation was doubtless appreciated by the general public. It was not a large Show, although some good exhibits were staged, liberal prizes having been offered in the various classes.

Specimen plants were shown in excellent condition. Mr. F. Mould, Pewsey, Wilts, was first for nine stove and greenhouse plants, staging fine specimens of *Erica tricolor* Wilsoni, *E. ventricosa* magnifica, *E. Cavendishi*, *E. eximia* superba, *Bougainvillea glabra*, *Ixora Dixiana*, *Azalea Jean Vervaene*, *Hedera tulipifera*, and *Statice profusa*. Mr. H. James, West Norwood, second, and Mr. J. Currey, West End, Wilton Road, Salisbury, was awarded third prize. For nine fine-foliage plants Mr. Henry James was first. This exhibitor staged well grown *Crotons*, *Kentia Fosteriana*, *Dasyllirion acrotrichum*, and *Pandanus Veitchii*. Mr. J. Currey was second with fine plants, and Mr. J. F. Mould third.

Mr. Charles Turner, Royal Nurseries, Slough, was awarded first prize for a group of twenty-five *Roses*. The plants were well grown and splendidly flowered. The best varieties were *Maréchal Niel*, *Celine Forestier*, *Juno*, *Camille Bernardin*, *Madame de Montehaven*, *Charles Lawson*, and *Marie Baumann*. Mr. C. Turner was again first for twelve Show and Fancy *Pelargoniums*, the best being *Gold Mine*, *Alice*, *Phyllis*, *Ellen Beck*, *Duchess of Edinburgh*, and *Mrs. Hart*. Mr. J. Ford, gardener to Sir C. Pigott, Bart., Wrexham Park, Slough, was first for eighteen herbaceous *Calceolarias*. These plants were remarkably well grown and flowered. Mr. J. Mowbray, gardener to Major Hon. H. C. Legge, Fulmer, Slough, was second with grand plants. Messrs. B. S. Williams & Son were the only exhibitors of twelve *Amaryllises*, and were adjudged the first prize. The same firm exhibited a collection of *Clivias*, for which the premier award was adjudged. The best varieties were *Surprise*, *Cruenta*, *General Gordon*, *Princess May*, *Lindeni*, and *Ambrose Verschaffelt*. Mr. C. Turner was awarded first prize for a group of *Malmaison Carnations*, the plants shown being well flowered. Mr. Chas. Turner was also first in the class for eighteen greenhouse *Azaleas*, showing magnificent examples. Mr. H. James, Castle Nursery, West Norwood, was accorded second prize for a very creditable exhibit.

For a group of miscellaneous flowering and foliage plants Messrs. J. Laing & Son, Stanstead Nurseries, Forest Hill, were awarded the first prize for a beautiful arrangement including *Crotons*, *Caladiums*, *Clivias*, *Cattleyas*, *Gloxinias*, *Liliums*, *Begonias*, *Amaryllises*, *Odontoglossums*, *Cypripediums*, and *Cannas*. The second prize in this class was accorded to Messrs. B. S. Williams & Son, Upper Holloway, who exhibited *Anthuriums*, *Cattleyas*, *Azaleas*, *Odontoglossums*, and a splendid piece of *Cymbidium Lowianum*.

Bouquets and baskets of flowers made a good display in the Exhibition buildings. For three stands or vases of flowers and foliage Miss Mary Foden, Marlowe's Nursery, Hemel Hempstead, was accorded the first prize for a most charming and tastefully arranged exhibit. Miss Lilian Hudson, Gunnersbury House, Acton, was second; and Mr. F. W. Seale, Vinc Nurseries, Sevenoaks, being third. Messrs. Perkins & Sons, Coventry, were, however, the leading exhibitors in the class for hand and brides' bouquets.

Miscellaneous exhibits formed a feature in the Show. Mr. Anthony Waterer, Knap Hill, Woking, sent a collection of *Azaleas*, well flowered. Messrs. R. Smith & Co., Worcester, had *Clematises* in pots, such as were staged at Crystal Palace, and which attracted much attention. Messrs. W. Paul & Sons exhibited a charming group of *Roses* in pots and cut blooms. Spenser, Merveille de Lyon, Clio, Lady Sheffield, and *Zenobia* were among the best of these. Mr. C. Turner sent specimens of his new *Rose*, "Turner's Crimson Rambler" well laden with blossoms. Messrs. T. S. Ware, Hale Farm Nurseries, Tottenham, arranged a fine group of hardy plants "not for competition." Amongst the most prominent of the plants in this exhibit were *Trollius giganteus*, *Spiræas*, *Delphinium nudicaule*, *Cypripedium acaulis*, *Primula Sieboldi*, *Pyrethrums*, and *Liliums*. Messrs. Collins Bros., Waterloo Road, S.E., also staged a group of hardy plants not for competition, which included *Pyrethrums*, *Lupinus*, *Irises*, *Aquilegias*, *Spiræas*, and *Liliums*. Messrs. Barr and Sons, Long Ditton, also had a large collection of hardy flowers in variety, which excited much interest amongst the visitors. Messrs. Cannell & Sons, Swanley, sent a group of *Begonias*, *Gloxinias*, tastefully arranged with Ferns; and Mr. W. Balchin, Hassocks Nurseries, Sussex, had a few plants of *Leschenaultia biloba* major. Mr. F. A. Morris, Church Road, Acton, was awarded a first-class certificate for a new dark *Coleus* named *Distinction*. Messrs. James Ford, Wexham Park, had a *Begonia* named *James Ford*; and Messrs. James & Sons, Farnham Royal, a group of *Calceolarias*. Messrs. Cutbush & Sons, Highgate, sent a large collection of hardy flowers; also a fine group of flowering and foliage plants.

Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, arranged a fine group of plants "not for competition." The exhibits contained *Anthuriums*, *Palms*, *Cypripediums*, *Azaleas*, *Spiræas*, and *Crotons*. Mr. Wythes also staged a collection of fruit, including well grown examples of *Strawberry Augusté Nicaise*; *Grapes*, *Black Hamburg*, and *Foster Seedling*; *Brown Turkey Fig*, *Lord Napier Nectarine*, and *Monstera deliciosa*. Mr. J. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, sent a collection of fruit and *Cherries*; and Messrs. J. Cheal & Sons, Crawley, Apples and other fruit and plants. Mr. A. Smith, High Wycombe, had cut *Roses* and *Pansies*.

#### THE GROUNDS AND GENERAL EXHIBITS.

A description of the Exhibition and the adjoining grounds was given in last week's issue of the *Journal of Horticulture*, and therefore it

would be superfluous to enter into details here. As previously stated, however, the Exhibition at that time was necessarily incomplete, and although much remains to be done yet the work of completion is being rapidly pushed on. So far as the gardening and forestry portions are concerned but little remains to be done, the grounds being planted in a most attractive manner.

The principal feature in this respect is doubtless, as was mentioned last week, the splendid covered-in garden. This is a grand example of indoor gardening. Huge banks and beds of *Rhododendrons*, planted by Messrs. W. Paul & Sons and Messrs. H. Lane & Sons, made a charming feature, the bright colours of the flowers contrasting admirably with the fresh green turf and winding gravelled walks. It is said that there are upwards of 2000 *Rhododendrons* in full bloom in this garden. A small group of a new *China Rose* named *Duke of York*, and a number of the recently introduced *Rose Princess May*, arranged by Messrs. W. Paul & Sons, naturally excited more than ordinary interest on the occasion of the opening ceremony. On one side of the main building is a magnificent fernery, which no visitor should miss. This rockery is splendidly constructed, and is planted with Ferns of various description, the scenic background being an admirable representation of Mr. Leopold Rothschild's garden at Ascott completes the arrangement.

Passing to the outside grounds the miniature fruit gardens designed and planted by Messrs. J. Cheal & Sons, Lowfield Nursery, Crawley, first meets the eye of the visitor. Here may be seen admirable examples of fruit growing on a small scale, and which also might be practised extensively. Cordon, pyramid, and standard Pear and Apple trees, also bush fruits are well represented, an archway covered with fruit trees being specially noticeable. Diamond-trained Currants and Gooseberries are also shown, and the majority of these are carrying a fair crop of fruit.

The beds and borders in various parts of the grounds are planted with shrubs and summer-flowering plants. Messrs. B. S. Williams and Sons fill some borders with *Zonal Pelargoniums* and other plants, whilst Mr. C. Turner, Slough, has planted a bed with *Fuchsias*, *Pelargoniums*, and *Cannas*. Miniature examples of forestry on light, medium, and heavy soils may also be seen. Messrs. C. Lee & Sons have rendered assistance in this department by planting shrubs and flowers. The examples of suburban gardening are deserving of more than a passing notice, and should prove instructive to amateurs.

With regard to the general horticultural exhibits in the main building these as yet are not very numerous. Messrs. Sutton & Sons, Reading, have a very interesting exhibit set forth in a tastefully designed show case, and is devoted principally to the display of vegetable, flower, and farm seeds. Models of vegetables, admirably executed and like-likeness in appearance, are also shown. There is also a collection of natural Grasses, whilst a series of coloured plates of Sutton's florists' flowers and a number of photographs of various departments of the vast seed establishment at Reading form a pleasing feature of their exhibit. Mention should also be made that the whole of the lawns of the Exhibition have been sown with Sutton's seeds. Messrs. F. Rosher & Co., Upper Ground Street, Blackfriars, S.E., are represented in various departments. They exhibit rustic summer houses, artistic in appearance and substantially built, greenhouses, statuary, and garden pottery in variety. The fountain in the main entrance hall is supplied by this firm. Conway G. Warne, Limited, Weston-super-Mare, also show garden pottery, Orchid pots, baskets, edgings, window boxes, vases, and statuary in excellent style. Similar exhibits are shown by Messrs. Pulham and Sons, Broxbourne, Herts. Other firms, it is believed, will also have stands of garden pottery, and these will be noticed at some future time. Mr. G. W. Riley, 81, Dulwich Road, Herne Hill, has examples of his skill in building summer houses and the manufacture of garden seats, rustic tables, and other ornamental sundries. These are represented in various designs, and should satisfy the tastes of the most fastidious.

Greenhouses and conservatories are not so plentiful as they were last year. Messrs. Mackenzie & Moncur, Edinburgh, have an ornamental conservatory, 16 feet by 10 feet, constructed, and drawings of horticultural appliances. Messrs. Sam Deards & Co., Limited, Eldon Street, E.C., exhibit plant houses and heating apparatus suitable for small and large structures. Chemical manures are shown by Messrs. R. Tons & Sons, Bow, E. Messrs. Chaffey Bros., Limited, 35, Queen Victoria Street, and of Melbourne, exhibit pictures and plans of fruit farms, vineyards, fruit sample cases, and other matters illustrative of the Australian irrigation colonies. Messrs. Ransomes, Sims, & Jefferies, Limited, Orwell Works, Ipswich, have a large and handsome display of their machines. Where a light machine is required for use by a boy, girl, or lady, or whether a heavier roller machine is desired, a selection may be made from this stand. This firm was awarded the gold medal for machines at the Exhibition last year.

The forestry section will be interesting to many, and is worthy of more than a brief notice such as must necessarily be given in the space at our disposal. Those who are interested in forestry, however, may with advantage spend a few hours in this department. Not the least important exhibit here is a collection of sixty varieties of Japanese woods sent by Major-General Sir R. Murdoek Smith, Director, Museum of Science and Art, Edinburgh. A. E. Forbes, Esq., Bowood, Calne, Wilts, exhibits a dozen specimens of damage done to timber by insects and fungi; and J. A. Rutherford, Esq., Estate Office, Highclere Park, Newbury, has sent some fine Conifers grown on the Highclere estate. J. W. Forbes, Esq., Farnham Royal, Slough, exhibits specimens of fallen limbs from the Burnham Beeches, and W. Carruthers, Esq., a number of British woods grown in Windsor New Forest. W. Somerville, Esq.,



Durham College of Science, Newcastle-upon-Tyne, has specimens of forest trees damaged by insects, and F. Simmonds, Esq., Windsor Forest, a number of foresters' tools, models, and logs. The Tasmanian Government exhibit blocks of wood, and Sir James Campbell, Bart., Whitmead Park, Coleford, sections of trees and specimens of woodpeckers' operations on diseased trees in search of insects.

### CRYSTAL PALACE SHOW.

MAY 11TH AND 12TH.

BRIGHT sunny weather and good flower shows generally go hand in hand, and the same may be said of the summer Exhibition, which was held at the Crystal Palace on Thursday and Friday last. Beautiful weather prevailed, and there was a splendid display of plants and flowers. In the opinion of Mr. Head, the garden Superintendent, it was the finest Show held at the Palace for twenty years, and other experts corroborated this statement. It reminded one of the Exhibitions held two or three decades ago, and the most enthusiastic of plant growers must have been satisfied with the results. Specimen plants were magnificent, those staged by Mr. J. Cypher and other leading exhibitors being the best that have been seen in the metropolis for some time. Groups of Orchids and miscellaneous plants were also good, and the same applies to the Roses and hardy plants, the latter forming quite a feature. Bouquets and dinner table decorations were likewise well represented, and attracted the attention of visitors.

#### OPEN CLASSES.

The specimen plants in this section of the Exhibition were very fine. For twelve stove and greenhouse plants Mr. James Cypher, Queen's Road Nursery, Cheltenham, was deservedly placed first. The specimens shown by this exhibitor were splendidly grown, and comprised *Pimelea decussata*, *P. Hendersoni*, *Erica ventricosa coccinea minor*, *E. v. magnifica*, *E. Cavendishi*, *Franciscea eximia*, *Anthurium Scherzerianum*, *A. Scherzerianum* Cypher's variety (grand), *Aphelexis purpurea grandiflora*, *Azalea Neptune* (very fine), *A. Mademoiselle Van Houtte*, and *Bougainvillea glabra*. Mr. J. F. Mould, Pewsey, Wilts, was a good second. The best plants in this exhibit were *Statice profusa*, *Erica Cavendishi*, *Clerodendron Balfouri*, and *Bougainvillea glabra*. Mr. William Finch, gardener to James Marriot, Esq., Queen's Road, Coventry, was third, this collection including a splendidly grown *Azalea Mabel*. Greenhouse Azaleas were well represented. Mr. C. Turner, The Royal Nurseries, Slough, secured the premier position for nine plants, these being grandly flowered. The varieties were *Roi d'Hollande*, *Charmer*, *Jean Vervaene*, *Comtesse de Flandres*, *Etendard de Flandres*, *Reine des Pays Bas*, *Madame de Cannart d'Hamale*, *George Loddiges*, and *Duc de Nassau*, the latter being specially fine. Mr. Albert Offer, Handcross Park Gardens, Crawley, was second with smaller specimens, and Mr. Henry James, West Norwood, third, the latter showing plants less formally trained.

Fine-foliage plants were quite as good as the flowering specimens. Mr. Albert Offer secured the premier position for nine plants. The specimens staged included *Asparagus plumosus nanus*, *Crotons Warreni*, *undulata*, *princeps*, *Alocasia macrorrhiza variegata*, and *Dieffenbachia magnifica* in first-rate condition. Mr. William Finch, Coventry, was second with grand examples, which included a magnificent and well coloured *Croton Disraeli*. Mr. H. James was third with smaller plants. Mr. Albert Offer also had the best nine stove and greenhouse Ferns, these being *Marrattia alata*, *Davallia polyantha*, *D. Moorcana*, *C. botium Schiedei*, *Alsophila excelsa*, *Nephrolepis davallioides furcans*, *Cyathea medullaris*, *Microlepia hirta cristata*, and *Alsophila australis*. Mr. W. Howe, gardener to Henry Tate, Esq., Park Hill, Streatham Common, was second, this including a well-grown *Goniophlebium subauriculatum*. Mr. A. Offer was also first for nine *Crotons*, showing grand plants of *Volutus*, *Chelsoni*, *undulatus*, *Nestor*, *Massangeanus*, *Weismanni*, *Queen Victoria*, and *picturatus*, all well coloured. Mr. H. James was second and Mr. J. F. Mould third. For twelve *Dracenas* Mr. J. Lambert, gardener to H. W. Segelcke, Esq., Effindale Lodge, Herne Hill, was first. The plants shown were well coloured. Mr. Henry James was second, and Messrs. J. Laing & Sons, third.

Orchids were shown in excellent condition both as specimen plants and in groups. Mr. Joseph Howes, gardener to W. Cobb, Esq., Silverdale Lodge, Sydenham, was awarded first prize for twelve Orchids in flower, showing well-grown specimens of *Odontoglossum Alexandræ*, *O. citrosum*, *Cypripedium caudatum*, *Cattleya Mossiæ*, *Brassia verrucosa*, *Oncidium ampliatum majus*, *Masdevallia Harryana*, *Odontoglossum polyanthum*, *Phalaenopsis grandiflora*, *Cymbidium Lowianum*, and *Maxillaria Sanderiana*. Mr. H. James, Castle Nurseries, West Norwood, was awarded the third prize. Mr. J. Cypher, Cheltenham, secured the premier position for a group of Orchids arranged for effect. This was a grand feature in the Show, the plants being staged in a tasteful manner, *Cattleyas*, *Odontoglossums*, *Lælias*, *Oncidiums*, *Masdevallias*, all well blended with Palms, Ferns, *Caladiums*, and other foliage plants. Messrs. B. S. Williams & Sons, Upper Holloway, were second with a charming group, comprising many choice Orchids, and including a grand specimen of *Cymbidium Lowianum*.

Fancy *Pelargoniums* were good, although not very extensively staged. Mr. C. Turner, Slough, was placed first for nine plants, showing *Princess Teck*, *Phyllis*, Mrs. Langtry, Mrs. Hart, Cloth of Silver, The Shah, Delicatum, Ambassador, and Fanny Gair in splendid condition. Mr. Turner was also first for nine Show *Pelargoniums*, staging *Ed. Perkins*, *Alice*, *Mons. Des Moulin*, *Joe*, *Lady Isabel*, *Prince Leopold*, *Magpie*,

Gold Mine, and *Madame Thibaut*. There were no other exhibitors of these in this section. Mr. Henry Guyett, gardener to Thomas Gabriel, Esq., Elmstead, Leigham Court Road, Streatham, was first for eighteen *Calceolarias*, showing fine plants laden with flowers.

As already said, Roses formed a feature in the Show. Messrs. W. Paul & Son, Waltham Cross, were awarded first prize for eighteen Roses in pots. The varieties staged included *Caroline de Arden*, *Innocente Pirola*, Mrs. J. Laing, *Centifolia rosea*, *Madame Lacharme*, *François Levet*, *Leon Renault*, *Ella Gordon*, *La France*, *Edward Morren*, *Marguerite Romaine*, *Beauty of Waltham*, and *Magna Charta*. Mr. C. Turner, Slough, was second. Messrs. G. Paul & Son were adjudged the premier award for a group of thirty Roses in pots, showing well-bloomed specimens of bushes and standards.

The awards for groups of miscellaneous plants arranged for effect brought out several leading exhibitors. Messrs. J. Laing & Sons, Forest Hill, were first for a group not exceeding 200 square feet. This was arranged in their usual tasteful manner, and secured the admiration of many visitors. Orchids, *Begonias*, *Crotons*, Palms, *Gloxinias*, *Dracenas*, *Ericas*, and Ferns were included in the group. Messrs. J. Peed & Sons were second with an attractive group, and Mr. J. Currey, Wilton Road, Salisbury, third. Messrs. J. Laing & Sons also secured the leading place for a group of *Caladiums* which contained many choice varieties. Messrs. J. Peed & Sons were second.

Tuberous *Begonias* were not so plentiful as might have been expected. Mr. T. S. Ware was awarded first for twelve single varieties, the best being *Monarch*, *Blushing Bride*, *Avoca*, *Marginata*, *Sovereign* (good yellow), *Sunset*, *Novelty*, *Nerissa*, and *Champion*. Mr. T. S. Ware was also accorded first for twelve double *Begonias*, showing *Duke of Teck*, *Filberta*, *Duchess of Teck*, Mrs. French, *Bexley Gem*, *Brilliant*, *Princess May*, *Beauty of Belgrove*, in grand form. Mr. J. Lambert, Effindale Lodge, Herne Hill, was first for nine *Lycopods*, and Messrs. B. S. Williams & Sons first for twelve *Amaryllis*, the best of which were Mrs. W. Lee, Dr. Masters, *Chelsoni*, and *Comtesse de Germiny*.

For twelve plants suitable for dinner table decoration Mr. Charles Lane, gardener to E. H. Coles, Esq., Burntwood, Caterham, was first. The specimens shown included *Aralia Veitchi gracillima*, *Crotons picturatum*, *Aigburthensis*, *angustifolium*, and *Cyperus alternifolius variegata*. Mr. Thomas Macgregor, gardener to the Dowager Lady Hay, North House, Putney Hill, was second; and Mr. J. Portbury, gardener to W. N. Troy, Esq., Ripon House, Putney Heath, third.

There were three competitors in the class for "a collection of hardy herbaceous, bulbous, and alpine plants, distinct." This class must have given the judges much trouble, owing to ambiguity of the wording of the schedule. The first prize exhibit, staged by Messrs. Collins Bros., perhaps contained a greater number of kinds of hardy flowers, thus being more complete as a "collection;" but the group staged by Mr. T. S. Ware, to whom the second prize was adjudged, was certainly "distinct" and the most effective. Messrs. G. Paul & Sons were third. Violets and Pansies were not particularly good. Messrs. W. Paul and Sons were awarded second prize for twenty-four *Violas* in pots, and Mr. A. Smith, Prospect House, Downley, High Wycombe, third for twenty-four Pansies in pots. Mr. C. Turner was the only exhibitor of twenty-four *Auriculas*, and also eighteen greenhouse Azaleas.

The bouquets, baskets of flowers, and dinner table decorations were very fine. Messrs. Perkins & Sons, Coventry, were first for a basket of flowers. This was comprised of *Cattleyas*, *Lælias*, *Odontoglossums*, *Lily of the Valley*, and *Maréchal Niel* Roses, with *Asparagus plumosus nanus*, and *Adiantums*. Messrs. Harwood Bros., Balham Nursery, Balham, were second; and Mr. Thomas Horsman, Clock House Nursery, Beckenham, third. Mr. F. W. Seale, Vine Nursery, Sevenoaks, was first for dinner table decorations, which had a bright and charming effect. Miss Mayhew, South Norwood Hill; and Mrs. Walter Mole, 22, High Street, Hemel Hempstead, were adjudged equal third prizes. For three stands or vases of flowers and foliage suitable for dinner table, Mr. W. Clark, Balham, was first; Mr. Seale, second; and Mr. Horsman, third. Messrs. Perkins & Sons were first for one bouquet (brides'); Messrs. Peed & Sons being second, and Mr. J. Prewett, Swiss Nursery, Hammersmith, third. Messrs. Perkins & Sons were also first for three bouquets; Mr. F. Seale being second. Messrs. Perkins were again first for six dress bouquets or sprays; Mr. T. Horsman second, and Mr. W. Acland, Crystal Palace, third.

In the cut flower section Messrs. G. Paul & Sons were awarded first prize for a collection of hardy flowers and shrubs arranged with foliage. Mr. W. Finch, Coventry, secured first prize for twenty-four varieties of stove and greenhouse flowers. Mr. A. Gibson, gardener to J. F. Burnaby-Atkins, Esq., Halstead Place, Sevenoaks, was second; and Mr. C. Lane, Caterham, third. Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, was first for twelve varieties of cut Orchids; and Mr. J. Prewett, Swiss Nursery, Hammersmith, being second.

#### AMATEURS' CLASSES.

Most of the amateurs' classes were fairly well filled, and some fine plants were staged. For six Palms Mr. W. Howe, Park Hill, Streatham, was first, showing grand specimens. Mr. W. Finch was second, and Mr. Albert Offer third. Mr. Offer had the best six *Dracenas* in this section; Mr. W. Carr, gardener to Mrs. Stephenson Clarke, Croydon Lodge, Croydon, taking a second honour. Mr. W. Finch had the best six fine-foliage plants, which included a splendid *Latania borbonica*. Mr. Albert Offer was second, and Mr. J. Currey was third. For six *Crotons* Mr. W. Howe was first with well coloured specimens.

Mr. W. Chapman, gardener to J. Spode, Esq., Hawkesyard, Staffs, had the best six stove and greenhouse plants, showing *Aphelexis*



grandiflora, *Statice profusa*, *Ericas ventricosa coccinea minor*, *Ixora Dixiana*, and *Anthurium Scherzerianum* in splendid condition. Mr. Albert Offer was second, and Mr. J. Currey third. Mr. J. Douglas was first with six exotic Orchids. Mr. J. Howes, gardener to W. Cobb, Esq., Silverdale Lodge, Sydenham, was second, and Mr. W. Finch third. Mr. James Portbury, gardener to W. N. Troy, Esq., Ripon House, Putney Heath, was the principal exhibitor with Begonias in this section. Calceolarias were best shown by Mr. J. Douglas, Mr. Henry Guyett, and Mr. J. Bateman, gardener to Mrs. King, Southwood, Sydenham Hill. Mr. Charles Boatwright, gardener to E. Covell, Esq., Beckenham, was first with six Caladiums, showing fine specimens. Mr. J. Day, gardener to W. S. Gover, Esq., Casino House, Herne Hill, was second, and Mr. F. Lambert third. Mr. J. Douglas was first with six stove and greenhouse Ferns, Mr. Boatwright being second. Mr. W. Carr was awarded second prize for six greenhouse Azaleas in bloom.

#### MISCELLANEOUS.

These were numerous and of a varied character. Messrs. B. S. Williams & Sons staged Otaheite Oranges laden with fruit, and Mr. C. Turner sent plants of his new Rose Turner's Crimson Rambler. Messrs. J. Laing & Sons sent a small collection of *Streptocarpus*, *Dracenas*, *Crotons*, and *Palms*. Messrs. W. Paul & Sons had a grand group of Roses in pots and some boxes of cut blooms. Messrs. Richard Smith & Co., St. John's Nurseries, Worcester, sent fine specimen Clematises in pots. Mr. W. Rumsey, had several boxes of cut Roses. Mr. H. J. Jones, Hither Green, Lewisham, had a grand collection of Pelargoniums in flower, and Mr. T. S. Ware, Tottenham, sent Tuberous Begonias in great variety. Messrs. Cutbush & Sons, Highgate, staged a group of miscellaneous plants; as also did Messrs. Peed & Bornemann, Sydenham. Mr. W. Leaking, Upper Norwood, sent some well grown Gloxinias. Messrs. W. Balchin & Sons, Hassocks Nursery, Sussex, staged a small group of *Leschenaultia biloba major*. A new Cucumber named Self's Prickly Pre-eminent was staged by Mr. F. G. Self, The Grange, Lower Sydenham; and Mr. Hardy, Parson's Green, sent a collection of Mushrooms. Extra prizes were awarded for the majority of these miscellaneous exhibits.

First-class certificates were awarded to Mr. Chas. Turner, Slough, for Polyantha Rose Turner's Crimson Rambler; Messrs. J. Peed & Sons, West Norwood, for Caladium Comtesse de Brosse; Mr. H. J. Jones, Lewisham, for Ivy-leaf Pelargonium Ryecroft Surprise; Messrs. Wm. Paul & Son, Waltham Cross, for Rose Clio; Mr. T. S. Ware, Tottenham, for Begonias Bexley Gem, Picotee, and Messina, also Border Carnation Pride of Great Britain; Messrs. Paul & Son, Cheshunt, for Herbaceous Phlox G. F. Wilson; and Messrs. J. Laing & Sons, Forest Hill, for Caladium Mons. Leon Saye, and Begonias Lady Brooke, Earl of Craven, and Lady Dunsany.

#### ARNICA MONTANA.

THIS is a plant that is worthy of more attention, as it is now comparatively neglected or confined to botanic gardens. On a rockery it has a pretty appearance, its bright orange yellow flowers being freely produced, and at Kew it is usually attractive at this time of the year. Of the ordinary shades of yellow we have abundant floral representatives, but a pure orange is not so frequently seen, and contrasts with many other colours very effectively.

#### ROYAL HORTICULTURAL SOCIETY.

MAY 9TH.

SCIENTIFIC COMMITTEE—Present: Mr. McLachlan (in the chair); Rev. W. Wilks, Mr. Blandford, Professor Müller, Dr. Bonavia, and Rev. G. Henslow, Hon. Sec.

*Myosotis alpestris*, multipetalous var.—The plants brought to the last meeting by Dr. Bonavia proved to be the same as that described and figured in the *Gardeners' Chronicle* (August 8th, 1891, p. 159), where it is stated that "According to M. Ernst Benary of Erfurt, who sent it out in 1886, it was raised in Germany, and is 'presumed to have sprung' from *M. alpestris*, robusta, grandiflora (Eliza Fourcort). It was fully described in M. Benary's list of novelties in 1886. He adds, 'It comes quite true from seed.'" Mr. Appleton of Sipson near Slough writes that he has grown some acres of it for five or six years, and always from seed, about 80 per cent. coming true. The name by which it is generally known is "Victoria," but Messrs. Carter are issuing seed for 1893, under the name of "The Jewell." It appears to be quite hardy, withstanding severe winters without any protection. A botanical description is given in the *Gardeners' Chronicle*, where it is called the "Hen and Chickens" Forget-me-not, as the flowers on the central axis terminate in a synanthic condition, while numerous scorpioid racemes radiate from below it. The stems are often strongly fasciated. With regard to the separate multipetalous flowers, Dr. Bonavia contributed the following additional observations:—"I have no doubt whatever that this monstrous form does seed, and for the following reasons:—(a) The pistil is conical, like the neck of a bottle in the middle of a circle of nucules; and the stigma is well formed, consisting of six or seven lobes, often covered with pollen. (b) When the corolla had fallen off for some time the stigma is shrivelled, and several of the nucules are much larger than their companions, indicating that their contents had been fertilised. I have two forms before me—one of a turquoise blue with all the flowers

elongated, and with an oval centre; the other is much paler, and with all its flowers circular, the centre being also circular. Both varieties have eight, nine, or ten petals and stamens." A further examination of the pistils made by Mr. Henslow reveals that either another pistil or a cluster of stamens may be found within the ovary. In the last report a number of free central ovules was described; but as this observation has not been confirmed, they were probably rudimentary papillæ of undeterminable character. On removing an ovule from a nucule it is found to be oval, with a remarkably long "beak" turned towards the funicle. Many consisted of a hollow bag-like structure, being presumably the primine only. Those which had become larger proved to possess pro-embryos, while the fully formed nucules, with black polished surfaces of the "seeds" issued by Messrs. Carter, had large, perfect, oily



FIG. 73.—ARNICA MONTANA.

embryos. The thanks of the Committee were given to Dr. Bonavia and Mr. Henslow for their investigations into the structure of this remarkable variety.

*Sugar-cane Moth*.—Mr. Blandford exhibited specimens received from Mr. Morris of moths, the caterpillars of which attack the Sugar-canes in Teneriffe. It appeared to be a variety of or perhaps a different species to *Diatraea saccharalis*, which bores into the Maize stems, from which it is said to have spread to the Sugar-canes. It was first figured by Rev. L. Guilding in the "Trans. Soc. of the Encouragement of Arts," 1828, vol. xvi., p. 149 (*D. sacchari*, Guild). It is also figured and described as the "Larger corn stalk-borer" by Mr. L. O. Howard, "Insect Life," p. 95 (*D. saccharalis*, F.). Washington 1891.

*Scale-insect on Retama*.—Mr. McLachlan exhibited specimens from Mr. Morris, the plants growing from 7-8000 feet on the Peak of Teneriffe. It proved to be *Mytilaspis pomorum*, the Apple-tree scale insect. It was first described as occurring in N. America. It subsequently appeared in Guernsey. It has also been found on the Broom, which is closely allied to Retama.

*Euonymus Attacked by Caterpillars*.—Specimens of the common Spindle tree, infested with the web-forming *Hyponomeuta evonymella*



were sent from Battersca Park, where they are described as doing great damage both to the deciduous and evergreen (Japanese) species of *Euonymus*. Another species is also attacking the Hawthorns. The best remedy is spraying the trees with some insecticide, as—e.g., 6 ozs. of Paris green dissolved in 100 gallons of water.

*Aquilegia*, var.—Mr. E. J. Low, of Shirenewton, Chepstow, sent examples of the dark crimson Columbine "Royal Marriage" without the usual spurs; a not uncommon variety, exhibiting a reversion to the presumed ancestral form.

## EXHIBITION AT THE MOSELEY BOTANICAL GARDENS, BIRMINGHAM.

THE first of a series of horticultural exhibitions was held here on the 10th and 11th inst., and was devoted chiefly to artistic floral work, such as wreaths, crosses, epergnes, and baskets of flowers, and a separate class for group of floral designs, at the discretion of the exhibitor, in a space 9 feet by 4 feet. Messrs. Perkins & Sons, Coventry, won the large gold medal for a wonderfully fine display of exquisite artistic work, no less than thirty-six objects being staged, including many charming shower bouquets of various materials, baskets and other designs. It was a grand display, and was much admired. Messrs. Pope & Sons, nurserymen, Birmingham, won the second gold medal for also a very fine display, and Mr. Thewles, florist, Birmingham, a large silver medal for white wedding shower bouquets, consisting of white flowers and silvered fronds of Ferns and Grasses, a new process. These were very handsome, as were some bridal fans. Messrs. Perkins & Sons were first for a wreath, a bride's bouquet, a bridesmaid's bouquet, and a massive large cross, but were very closely run by Messrs. J. R. Pearson and Sons, Chilwell Nurseries, Nottingham, with a very handsome arrangement.

Another class was devoted to groups of cut flowers, any kinds, in a space 6 feet by 3 feet, and Messrs. Pope & Sons were first with a fine display, and Mr. Clements, gardener to Mrs. Horton, second.

Some fine groups of plants were arranged in competition, and Messrs. Hewitt & Co., nurserymen, staged a fine group of plants, in which were masses of *A. F. Barron*, *Volunté Nationale alba*, and *Jubilee Pelargoniums*, also a number of cut hardy flowers. Some wonderfully fine Mushrooms were staged by the gardener at Moseley College, so fine indeed that a silver medal was awarded to them.

## ROYAL NATIONAL TULIP SOCIETY.

MAY 13TH.

THE annual Exhibition of this Society was held at the Manchester Botanical Gardens, Old Trafford, Manchester, on Saturday last. The date originally fixed was the 23rd of May, but the hot forcing weather of the last few weeks made it necessary to alter the date to the 13th; and although this date is the earliest date on record for the National Tulip Show, yet the blooms of some growers—for instance, of Messrs. Horner, Haynes, and Thurstan—was past, and they were unable to exhibit. On the other hand, the Wakefield growers wanted the Show to be held on the 23rd, as originally fixed, as their Tulips were not in good bloom. Still the Show was the best held for several years, and all the classes were keenly contested. There were few notable novelties shown. Amongst little-known flowers we noted "Dr. Hutcheon," a magnificent flamed bizarre, raised by the late Mr. Storer. This variety, if a good grower, bids fair to challenge Sir Joseph Paxton, whose right to be considered the best Tulip grown has been undisputed forty years. "Lord Frederick Cavendish," a Yorkshire flower, is a most welcome and valuable addition to the red-feathered bizarre class. "Bertha" was a first-rate feathered bybloemen, the colour is, however, rather rosy; and *Clio*, a large flamed darkish rose, was very striking. Many old kinds were shown in fine style, and it was rather startling to find in the stand of twelve that won the silver cup such veterans as Lord Lilford, Duke of Devonshire, *Aglaia*, and *Bienfait*. Amongst the usual kinds Sir Joseph Paxton, *Aglaia*, Duchess of Sutherland, *Masterpiece*, and *Talisman* were in good style; and *Chancellor*, often so disappointing, was a noble flower. There was a stiff competition for the "cup" class, nine stands of twelve being staged. The Judges were Messrs. Woodhead, of Staleybridge; Keysey, of Gorton; and the veteran Mr. J. Dicken, of Hurst. The following is a list of the awards:—

### RECTIFIED TULIPS.

Class 1.—Twelve dissimilar Tulips, two feathered and two flamed in each class.

First, Mr. W. Kitchen of Marple with flamed bizarres, Sir Joseph Paxton and Duke of Devonshire (fine); flamed bybloemen, *Chancellor* (excellent) and *Adonis*; flamed roses, *Clio* and an unnamed variety; feathered bizarres, Lord Lilford (rather greasy base) and *Masterpiece*; feathered bybloemen, *Violet Amiable* (fine) and *Bienfait* (perfectly pure); feathered roses, *Minerva* (bad shape) and *Julia Farnese*.

Second, Mr. S. Barlow, Stakehill, with flamed bizarres, Prince of Wales (fine), Lord Stanley (excellent); flamed bybloemen, *Talisman* (very good) and *Friar Tuck*; flamed roses, *Aglaia* and *Madame St. Arnaud*; feathered bizarres, *Garibaldi* (very fine) and *Masterpiece*; feathered bybloemen, William Parkinson (beautiful) and *Violet Amiable*; feathered roses, *Modesty* and *Madame St. Arnaud*.

Third, Mr. J. W. Bentley, Stakehill, with flamed bizarres, Dr. Hutcheon (fine), and Sir Joseph Paxton; flamed bybloemen, Ashmole's

114 and *Talisman* (very good); flamed roses, *Annie McGregor* and an unknown variety; feathered bizarres, William Wilson (good) and Sir Joseph Paxton; feathered bybloemen, King of the Universe and *Friar Tuck*; feathered roses, *Julia Farnese* and *Heroine*.

Fourth, Mr. John H. Wood, Royton, with flamed bizarres, William Lea and Sir J. Paxton; flamed bybloemen, *Chancellor* and Lord Denman; flamed roses, *Annie McGregor* and *Mabel*; feathered bizarres, Sulphur (fine) and *Masterpiece*; feathered bybloemen, *Bessie* and *Violet Amiable*; feathered roses, *Modesty* and *Mabel*.

Fifth, Mr. C. W. Needham, Royton, with flamed bizarres, Dr. Hutcheon (a grand flower) and Sir J. Paxton; flamed bybloemen, Duchess of Sutherland and Lorenzo; flamed roses, *Aglaia* and *Annie McGregor*; feathered bizarres, Wm. Wilson (very fine and large); feathered bybloemen, Elizabeth Pegg and Mrs. Lymbery (poor); feathered roses, Mrs. Atkin and *Modesty*.

Class 2.—Six dissimilar Tulips, one in each class. In this class there were twelve competitors.

First, Mr. J. W. Bentley, with an excellent stand, comprising Sir Joseph Paxton (extra good), flamed bizarre; Lord Frederick Cavendish (fine), feathered bizarre; *Chancellor* (very good), flamed bybloemen; *Mabel*, flamed rose; *Modesty*, feathered rose; and Elizabeth Pegg (very fine), feathered bybloemen.

Second, Mr. S. Barlow, with Sir J. Paxton, flamed bizarre; *Friar Tuck*, flamed bybloemen; *Annie McGregor*, flamed rose; Mrs. Cooper (beautiful), feathered bybloemen; Sarah Headley, feathered rose; and *Garibaldi*, feathered bizarre.

Third, Mr. W. Kitchen, with Sir J. Paxton, flamed bizarre; Duchess of Sutherland, flamed bybloemen; *Triomphe Royale*, flamed rose; Lord Lilford, feathered bizarre; *Violet Amiable*, feathered bybloemen; and *Mabel*, feathered rose.

Fourth, Mr. J. Jones, Denton, with Sir J. Paxton, flamed bizarre; Lord Denman, flamed bybloemen; *Mabel*, flamed rose; Sir Joseph Paxton, feathered bizarre; *Modesty*, feathered rose; and *Bertha* (a beautiful flower), feathered bybloemen.

Fifth, Mr. W. Dymock of Stockport. Sixth, Mr. J. H. Wood. Seventh, Mr. C. W. Needham. Eighth, Mr. A. Moorhouse, Wakefield.

Class 3.—Six dissimilar Tulips, one feathered and one flamed in each class (for small growers only).

First, Mr. H. Gill, Leeds, with Sir J. Paxton, flamed bizarre; *Mabel*, flamed rose; *Bessie*, flamed bybloemen; Lord Frederick Cavendish, feathered bizarre; Mrs. Gill, feathered bybloemen; and *Heroine*, feathered rose.

Second, Mr. John Hayes, Bedford Leigh, with Sir J. Paxton, flamed bizarre; *Chancellor*, flamed bybloemen; an unknown flamed rose; Sir Joseph Paxton, feathered bizarre; *Violette Amiable*, feathered bybloemen; and *Industry*, feathered rose.

Class 4.—Three feathered Tulips. First, Mr. J. W. Bentley, with Guido, Rosetta, and *Masterpiece*. Second, Mr. J. H. Wood, with *Bessie*, *Annie McGregor*, and W. Wilson. Third, Mr. W. Kitchen, with *Violet Amiable*, *Compte de Vergennes*, and King. Fourth, Mr. C. W. Needham, with Carbuncle, *Mabel*, and *Magnum*. Fifth, Mr. J. Jones. Sixth, Mr. Moorhouse.

Class 5.—Three flamed Tulips. First, Mr. W. Kitchen, with Lord Denman, *Clio*, and Willison's King. Second, Mr. J. H. Wood, with Lord Denman, *Mabel*, and Sir J. Paxton. Third, Mr. J. Hague, Stockport, with Norval, *Triomphe Royale*, and Sir J. Paxton. Fourth, Mr. S. Barlow, with Martin's 101, *Mabel*, and *Masterpiece*. Fifth, Mr. W. Prescott. Sixth, Mr. J. W. Bentley.

Class 6.—Two Tulips one feathered and one flamed of any class. For maiden growers only. First, Mr. H. Gill, with Sir Joseph Paxton and *Masterpiece*. Second, Dr. W. Pegge (Beeston, Notts), with Elizabeth Pegg and Sir J. Paxton. Third, Messrs. Stuart & Mein, Kelso, with Carbuncle and *Masterpiece*.

Class 7.—Two Tulips, one feathered and one flamed of any class. First, Mr. H. Gill, with Sir J. Paxton flamed, and *Masterpiece* feathered. Second, Mr. W. Dymock, with Sir J. Paxton flamed, and King of the Universe feathered. Third, Mr. S. Barlow, with Dr. Hardy flamed, and Sir S. Romilly feathered. Fourth, Mr. W. Kitchen, with Prince of Morocco flamed, and *Violet Amiable* feathered. Fifth, Mr. J. H. Wood. Sixth, Mr. W. Prescott.

Class 8.—Single blooms. Feathered bizarres.—First, Mr. Moorhouse, with John Ratcliffe; second, Mr. Jones, with Sir J. Paxton; third, Mr. Moorhouse, with *Masterpiece*; fourth, Mr. Bentley, with Wm. Annibal; fifth, Mr. Kitchen, with Sulphur; sixth, Mr. Barlow, with Hepworth's 34/64 seedling; seventh, Mr. Bentley, with Lord Stanley; eighth, Mr. Barlow, with Richard Yates; ninth, Mr. Barlow, with General Grant; tenth, Mr. Wood, with Emperor Nicholas.

Feathered roses.—First, Mr. Bentley, with *Julia Farnese*; second, Mr. Moorhouse, with Mrs. Lea; third, Mr. Barlow, with *Annie McGregor*; fourth, Mr. Kitchen, with Alice; fifth, Messrs. Stuart & Mein, with Sarah Headley; sixth, Mr. Kitchen, with *Modesty*; seventh, Messrs. Stuart & Mein, with Mrs. Atkin; eighth, Mr. Kitchen, with *Compte de Vergennes*; ninth, Mr. Kitchen, with *Clio*; tenth, Mr. Barlow, with Owl.

Feathered bybloemen.—First, Mr. Barlow, with *Violet Amiable*; second, Mr. Bentley, with *Bessie*; third, Mr. Barlow, with *Adonis*; fourth, Mr. Jones, with *Bertha*; fifth, Mr. Kitchen, with *Violet Amiable*; sixth, Mr. Kitchen, with *Bienfait*; seventh, Mr. Bentley, with *Bacchus*; eighth, Mr. Barlow, with Wm. Parkinson; ninth, Mr. Dymock, with John Hart; tenth, Mr. Dymock, with King of the Universe.



Flamed bizarres.—First, Mr. Barlow, with Sir J. Paxton; second, Mr. Dymock, with Sir J. Paxton; third, Mr. Dymock, with Dr. Hardy; fourth, Mr. Kitchen, with Masterpiece; fifth, Mr. Barlow, with Lord Stanley; sixth, Mr. Bentley, with William Wilson; seventh, Mr. Kitchen, with San José; eighth, Mr. Bentley, with Sulphur; ninth, Mr. Hayes, with Orpheus; tenth, Mr. Bentley, with Duke of Devonshire.

Flamed roses.—First and second, Mr. Kitchen, with Aglaia; third, Mr. Hague, with Mabel; fourth, Messrs. Stuart & Mein, with Triomphe Royale; fifth, Mr. Bentley, with Lady C. Gordon; sixth, Mr. Prescott, with Annie McGregor; seventh, Mr. Kitchen, with Clio; eighth, Mr. Bentley, with Lea's Seedling; ninth, Mr. Hague, with Madame St. Arnaud; tenth, Mr. Dymock, with a seedling.

Flamed bybloemens.—First, Mr. Kitchen, with Chancellor; second, Mr. Kitchen, with Duchess of Sutherland; third, Mr. Prescott with Bion; fourth, Mr. Barlow, with Friar Tuck; fifth, Mr. Barlow, with Maid of Orleans; sixth, Mr. Kitchen, with King of the Universe; seventh, Mr. Barlow, with Talisman; eighth, Mr. Jones, with Maid of Orleans; ninth, Mr. Dymock, with Lord Denman; tenth, Mr. Kitchen, with an unnamed variety.

The prize for the best feathered Tulip in the whole Exhibition was given to Mr. Jones for the bloom of "Bertha," feathered bybloemen, exhibited in his stand of six flowers; and the prize for the best flamed flower in the Exhibition was given to Mr. Bentley for the Sir Joseph Paxton flamed bizarre in his stand of six flowers.

#### BREEDER TULIPS.

Breeder Tulips were exhibited in good numbers, and were remarkably fine; they were a beautiful feature in the Exhibition.

Class 10.—Six dissimilar breeder Tulips, two in each class. First, Mr. Bentley, with Sir Joseph Paxton and Goldfinder, bizarres; Glory of Stakehill and Wm. Parkinson, bybloemens; Mrs. Barlow and Madame St. Arnaud, roses. Second, Mr. Barlow, with Sir Joseph Paxton and Goldfinder, bizarres; Miss B. Coutts and Rose Hill, roses; Alice Grey and Glory of Stakehill, bybloemens. Third, Mr. J. Hague, with Alice Grey, Mrs. Barlow, Jeanette, and three unnamed varieties. Fourth, Mr. Needham, with Criterion and Paxton, bizarres; Annie McGregor and Mabel, roses; Martin's 117 and an unknown, bybloemens. Fifth, Mr. Kitchen. Sixth, Mr. Jones.

Class 11.—Three breeder Tulips, one in a class. First, Mr. Barlow, with Miss B. Coutts, Sir Joseph Paxton, and Glory of Stakehill. Second, Mr. Kitchen, with Annie McGregor, Sir J. Paxton, and seedling. Third, Mr. Hague, with Annie McGregor, J. Wilkinson, and Alice Grey. Fourth, Mr. Bentley, with Olivia, Lord F. Cavendish, and Glory of Stakehill. Fifth, Mr. Dymock. Sixth, Mr. Gill. Seventh, Mr. Moorhouse. Eighth, Mr. Wood.

Class 12.—Single blooms, bizarre breeders. First, Mr. Barlow, with Goldfinder; second, Mr. Barlow, with Sulphur; third, Mr. Prescott, with Sir J. Paxton; fourth, Mr. Barlow, with Horatio; fifth, Mr. Dymock, with Dr. Dalton; sixth, Mr. Bentley, with Richard Yates; seventh, Mr. Barlow, with Criterion; eighth, Mr. Bentley, with Dr. Hutcheon.

Rose breeders.—First, Mr. Kitchen, with Olivia; second, Mr. Barlow, with Miss B. Coutts; third, Mr. Kitchen, with Rose Hill; fourth, Mr. Barlow, with Olivia; fifth, Mr. Prescott, with Mrs. Collier; sixth, Mr. Kitchen, with Countess of Burlington; seventh, Mr. Barlow, with Annie McGregor; eighth, Mr. Gill, with Madame St. Arnaud.

Bybloemen breeders.—First, Mr. Barlow, with Adonis; second, Mr. Bentley, with Ashmole's 126; third, Mr. Barlow, with Glory of Stakehill, fourth with Ashmole's 114, fifth with Martin's 117, sixth with Elizabeth Pegg, seventh with Hepworth's 164/65, and eighth with Agnes.

The prize for the best breeder Tulip in the Exhibition was awarded to Mr. Barlow for the bloom of Goldfinder, exhibited in class 12.

#### ROYAL BOTANIC SOCIETY.

MAY 17TH.

THE summer Exhibition of the Royal Botanic Society was held in the Gardens at Regent's Park on Wednesday, May 17th. The Show was not quite so large as usual, but it was of a bright and diversified character although the weather was showery. The groups of plants, tastefully arranged, made a charming feature, as likewise did the collections of Roses staged by various growers. Azaleas were, as usual at this Show, very fine, and the same may be said of the Fancy Pelargoniums. Begonias and Calceolarias, too, were conspicuously shown, as also were hardy flowers and specimen plants. Appended are the names of the prizewinners in the competitive classes, also the other awards made for the various exhibits.

In the open class for twelve stove and greenhouse plants in flower, Mr. J. F. Mould, Pewsey, Wilts, was first. This exhibitor staged the same plants apparently as were shown by him at Earl's Court a few days previous. They were fine specimens, and reflected credit on the grower. Mr. Mould was also first for six stove and greenhouse plants in flower, which included a fine *Ixora* *Dixiana*, and other grand examples. Mr. Henry James, Castle Nursery, West Norwood, secured the second prize, showing smaller but well flowered plants. Mr. A. Offer, Handcross Park, Crawley, was first in the amateurs' class for six stove and greenhouse plants, staging *Hedera* *fuchsoides*, *Anthurium Schertzerianum*, *Statice profusa*, *Azalea* *Duc de Nassau*, *Erica Cavendishi*, and *Aphelexis macrantha purpurea* in splendid condition. Mr. Offer was also first in the open class for six Cape Heaths with well grown plants, Mr. J. F. Mould being second.

Greenhouse Azaleas were very fine, the plants being profusely flowered. Mr. R. Scott, gardener to Miss Foster, The Holmes, Regent's Park, was first in the amateurs' class for six plants, showing well-trained specimens. The best were *Phœbus*, *Duchess A. de Nassau*, *Ceres*, and *Reine de Pays Bas*, all in first-rate condition. Mr. A. Offer was second with larger plants, but not so densely flowered. Mr. H. Eason, gardener to B. Noakes, Esq., Hope Cottage, Highgate, secured the first prize for six greenhouse Azaleas in smaller pots. These plants were also covered with bloom. Mr. C. Turner, Royal Nursery, Slough, was placed first for twelve greenhouse Azaleas in the open class, staging neat and well-flowered specimens. Mr. Turner was also first for six Azaleas, these plants being very fine, especially *Roi d'Hollande*, *Etendard de Flandres*, and *Duc de Nassau*.

Mr. Henry James was first for six fine-foliage plants, which included *Crotons*, *Dasyliion acrotrichum*, and *Palms*. Mr. Offer was first in the amateurs' class for six foliage plants, staging remarkably well-grown specimens of *Crotons princeps*, *Queen Victoria*, *Cycas revoluta*, *Kentia Balmoreana*, *Pritchardia pacifica*, and *Encephalartos Altensteini*. The same exhibitor was also first for six variegated-leaved plants. Mr. Henry James was second in this class. Mr. Offer likewise secured the first prize for six large specimen Ferns, showing grand plants.

Messrs. W. Paul & Sons, Waltham Cross, were awarded first prize for nine specimen Roses in pots. These were grand plants, and included *Charles Lawson*, *Celine Forester*, *Juno*, *Catherine Soupert*, and *Violette Beuyer*. For a collection of Roses Mr. C. Turner, Slough, was first with smaller but grandly flowered plants. Messrs. Paul & Sons, Chessington, were second with a collection of fine specimens. Messrs. W. Paul & Sons sent a dozen boxes of cut Roses, fresh and fragrant, and for which a silver medal was recommended. Mr. G. Mount, Canterbury, also had some boxes of cut Roses, the best of which were *Ulrich Brunner*, *Catherine Mermet*, and *La France* (silver medal).

Messrs. J. Laing & Sons, Forest Hill, S.E., were adjudged first prize for a group of *Caladiums*, the plants being fresh and well coloured. The best varieties were *Salvator Rosa*, *Leopold Robert*, *Clio*, *Triomphe de l'Exposition*, and *Candidum*. Messrs. Laing & Sons also secured the first prize for twelve *Tuberous Begonias*. The best of these were *Earl of Craven*, *Lady Brooke* (certificates), *Mrs. Laing*, and *Stanstead Gem*. Mr. T. S. Ware, Tottenham, was second, showing good plants. Mr. C. Turner was first with six *Pelargoniums* in two classes. The plants were well flowered, and the best varieties were *Spotted Beauty*, *The Czar*, *Gold Mine*, and *Maggie*. Mr. H. Eason was awarded first prize for twenty-four *Gloxinias*. Mr. T. S. Ware was first with a collection of hardy herbaceous plants, which included *Pyrethrums* in variety, *Inula grandiflora*, and hardy *Cypripediums*. Messrs. G. Paul & Sons were second. Mr. Henry James was first for twelve *Orchids*, which included some well-grown plants.

Miscellaneous exhibits were numerous. Mr. H. J. Jones, Hither Green, Lewisham, sent a grand group of Show and Fancy *Pelargoniums* in flower, for which a silver medal was recommended. The same exhibitor showed plants of *Ivy-leaved Pelargonium* "*Ryecroft Surprise*," and these well merited the certificate awarded. Messrs. J. Carter and Co., High Holborn, sent a group of *Mimulus* in bloom, which included a fine variety named *Gloriosa*. A certificate was awarded for this variety, and a bronze medal was adjudged for the whole exhibit. Messrs. Carter & Co. also staged a group of *Petunias* in pots (silver medal), and a certificate was awarded for *Petunia Pallas*, a pretty variety. Messrs. J. Laing & Sons had a small collection of rare and new plants, amongst which were *Croton Golden Ring*, *Dracæna indivisa variegata*, *Coleus Stanstead Beauty*, and the seldom-seen *Fuchsia triphylla*. Messrs. Laing & Sons also had a splendid group of flowering and foliage plants, for which a silver-gilt medal was recommended. This contribution was tastefully arranged, and comprised, amongst other plants, *Orchids*, *Palms*, *Caladiums*, *Cannas*, *Gloxinias*, and *Ferns*.

Mr. C. Turner had a small group of *Souvenir de la Malmaison* *Carnations* and Turner's *Crimson Rambler Rose* (large bronze medal). Messrs. Barr & Son sent a large collection of hardy plants and cut flowers, which formed quite a feature in the Show (small silver medal); and Mr. J. R. Box, Croydon, had a group of *Tuberous Begonias*, for which a silver medal was recommended. Certificates were awarded for *Begonias* *Hon. Sidney Herbert*, *Lady Beatrice Herbert*, and *Miss Jenkins*. Mr. Anthony Waterer, Knap Hill, sent a collection of cut Azaleas (large bronze medal); and Messrs. J. Peed & Sons, Roupell Park, had a well-arranged group of miscellaneous plants (small silver-gilt medal). Messrs. G. Paul & Son sent some single Roses and Cannas, and Mr. C. Turner a basket of *Rosy Gem Pelargonium*, a charming variety. A certificate was awarded for the last named exhibit. Mr. T. S. Ware had blooms and plants of *Pride of Britain Carnation*, and Messrs. J. Veitch and Sons a collection of *Streptocarpus*, *Rhododendrons*, *Gloxinias*, and *Phyllocactus*. Certificates were awarded for *Phyllocactus Niobe*, *Streptocarpus* (for strain), *Rhododendron Ceres*, *R. Primrose*, *R. balsaminæ-florum* "*Rajah*," (very fine), and *Gloxinia Orion*. Mr. T. J. Seidel, Dresden, secured a certificate for *Rhododendron Helene Schiffner*, a pure white variety.

Messrs. Sutton & Sons, Reading, sent a large collection of herbaceous *Calceolarias*, for which a small silver-gilt medal was recommended. The flowers were varied in colour, and this contribution made a fine display. Mr. Perry, gardener to J. C. Tasker, Esq., Middleton Hall, Brentwood, sent *Canna* blooms (bronze medal); and Messrs. W. Balchin & Sons, Hassocks, a small group of *Leschenaultia biloba major*, the pretty blue flowers of which were greatly admired.

As usual the exhibits were admirably arranged, the groups of



miscellaneous plants on sloping banks making a charming display. Blended with these were the collections of flowering and foliage plants, amongst which the Roses and Pelargoniums, as already remarked, stood out conspicuously. The customary exhibits in the corridor were, however, absent this year, although apart from this there were plenty to interest the visitors. It rained heavily at intervals during the day, which to a certain extent marred the pleasures usually derived from a fine Show.



#### HARDY FRUIT GARDEN.

**Syringing and Watering Wall Trees.**—Healthy growth can only be secured by constant attention to keeping the foliage clean. Against warm dry walls the aridity of the atmosphere is such during the present sunny weather that insects soon find the conditions most suitable for their increase. If not early attacked with a view to dislodge them they not only usurp young stems and leaves as feeding ground, but form protective coverings to screen themselves from view. This is especially the case with aphides, which curl and pull down the edges of the leaves at the leading points of shoots in such an effective manner that it is difficult for ordinary syringing to reach the crowded colonies thus established. In such cases dipping the infested points in an approved insecticide should precede general syringing. Towards the close of mild warm days is the best time to syringe, either to cleanse the trees from dust or as a preventive of insects, also when applying insecticides. When cold cutting winds prevail syringing as a rule is not beneficial, and should be discontinued. In order to cope successfully against insects and promote healthful growth the state of all fruit borders must be fully ascertained, and moisture if needed afforded to the lowest roots, afterwards mulching the surface with manure to conserve it.

**Extirpating Insects.**—At the present time, owing to the continued dry weather, this is a very needful and important operation. Green or black aphides infest the young shoots of Peaches, Nectarines, Cherries, Plums, Gooseberries, and Currants on walls. If not destroyed they soon arrest as well as cripple growth. Red spider assails both sides of the leaves of Apple trees, also Peaches, while Gooseberries are attacked by the larvæ not only of the Gooseberry and Currant sawfly but of the magpie moth.

**Remedies.**—*Tobacco Powder.*—Slight effects of aphides may often be checked by dredging the infested shoots when damp or wet with tobacco powder, but when the shoots attacked are numerous this method is too tedious.

*Softsoap and Petroleum Solution.*—A solution of softsoap and petroleum made in the following manner will soon exterminate aphides, red spider, Gooseberry and Currant sawfly, and the caterpillars of the magpie and winter moth. Boil 1 lb. of softsoap in half a gallon of water, and when thoroughly dissolved add half a pint of petroleum, allowing the whole to gently boil or simmer for fifteen minutes, by which time, if kept thoroughly stirred, the ingredients will be well mixed together. This mixture is too strong to be used alone. When cool place it in bottles, and a handy insecticide will be ready for mixing with water at the rate of 1 pint to 4 gallons of water. Keep the mixture well stirred and apply with the aid of a spray distributor, by which the solution can be distributed equally and without waste over every portion of infested trees.

*Paris Green.*—This compound, though poisonous and requiring great care in using, is nevertheless one of the finest remedies known for destroying the small but destructive larvæ of the winter codlin, lackey, magpie, and umber moths, which annually work havoc with the young foliage, the flowers, and often the fruit of Apples, Pears, and Plums. During the blossoming period it is unsafe to apply Paris green on account of the bees which, visiting the flowers, perform substantial service in aiding fertilisation. Now, however, that the flowers have decayed, and attacks of the larvæ are imminent, spraying once a fortnight for some weeks with Paris green will prove a most effectual remedy. To apply it so that it acts destructively to caterpillars or other pests it must be distributed in a fine mist-like spray, both on the under and upper surfaces of the leaves where it is deposited as a thin film or sediment. Through this the young caterpillars have to pierce to find the juicy food they seek, but in doing so they imbibe the poison which quickly kills them. The proportions of Paris green and water are 1 oz. to 20 gallons of water. This is safe for tender foliage. Paris green is obtainable both as powder and paste; the latter is the safest and best because it is more easily mixed with water. The best instruments for delivering the mixtures are either a knapsack pump, a spraying machine, or a spray distributor.

**Destroying Mildew.**—Very frequently mildew attacks the young shoots of Apples, Peaches, and Nectarines. It is chiefly induced to appear when the trees are growing in poor, dry, and exhausted soil. In that case little can be done to exterminate it wholly merely by dressing the infested shoots with insecticides. In addition to applying these,

lifting and replanting trees in the autumn in some cases acts beneficially. This method, however, can only be adopted with small and moderate sized trees; those of larger size and long established must be treated to plenty of moisture with clear water, then enrich the soil with liquid manure. The evil of mildew will thus be struck at its foundation. For an insecticide or fungicide that will rid the shoots of mildew after a few applications try a solution of 2 ozs. of softsoap in a gallon of water, mixing into a paste 2 ozs. of sulphur, adding that, well mixing, and syringe the trees. Another good remedy for mildew is sulphide of potassium, half an ounce to a gallon of water. Dusting the affected parts with dry sulphur is also effectual, first wetting the shoots or foliage to cause the sulphur to adhere. In a day or two wash it off again with the syringe, repeating if necessary.

**Blistered Leaves.**—Though not so common as usual in cold spring seasons, any leaves that may be found upon trees curled and malformed in appearance should be picked off and burnt. They are chiefly caused by sudden changes in the temperature, exposure to cold, dry cutting east winds, and a more or less inactive condition of the roots.

#### FRUIT FORCING.

**Pines.**—The sunshine has helped Pine plants to make a sturdy growth never perhaps before seen in these at this time of year. Such conditions should be fully utilised, as under them the growth in the plants may be advanced more expeditiously and with safety, provided proper attention be given to the ventilation, which in sunny weather should be attended to early in the morning. A genial condition of the atmosphere must, however, be maintained by damping all available surfaces about the houses whenever they become dry. This is especially necessary just before closing time, which should be sufficiently early in the afternoon to keep the temperature at 85° to 90° for a considerable time afterwards. During dry weather syringing will be required daily, regulating it by the condition of the weather, house, and plants. The best criterion in the case of the plants is the axils of the leaves, which during the growing season should never be allowed to become quite dry, because many feeding roots exist round the stems of Pine plants which only derive support from the water in the axils of the leaves. Care must be taken at this season not to allow any plant to suffer from dryness, but afford an adequate supply of water, and in all cases with some stimulant such as guano, 1 lb. to 20 gallons of water being a proper and safe liquid, always applying it at the same temperature as that of the bed in which the pots are plunged.

The requisite attention must be given to shading; the thinner the material is for the purpose the better, as only enough shade is needed to prevent the sun scorching the leaves or fruit. Fire heat should be dispensed with as much as possible, but it will still be necessary in the succession as well as the fruiting houses as the nights are still cold. Remove all surplus suckers, leaving one or two on each plant for stock, they being best screwed clean out of their sockets with a pair of long handled tongs. Maintain a temperature of 70° to 75° by artificial means in the fruiting department, and close the house at 90°. Recently potted plants should have a liberal supply of bottom heat: 90° to 95° at the base of the pots will induce the roots to take hold of the soil quickly, and when they reach the sides 80° to 85° will be safer.

**Figs.**—*Earliest Forced Trees in Pots.*—After the first crop is cleared from the trees recourse must be had to syringing twice a day, also watering copiously at the roots with guano or other form of liquid manure. This will enable the trees to make a more vigorous growth, and it is essential that the second growth be well nourished and not burdened with fruit. If the second crop fruits show very abundantly they must be thinned, leaving those at the base of the current year's growth for the crop, and the trees must not be overburdened. Trees ripening their fruit should have lessened supplies of water at the roots, but still afford sufficient to keep the foliage in good health, and discontinue syringing the trees. A circulation of warm air is necessary for the colouring process, leaving the top ventilators open a little at night, the highest coloured fruit being the best flavoured.

*Planted-out Trees.*—The first crop of Figs on the early started trees are now giving indications of ripening, and until it is perfected a little ventilation should be allowed constantly at the top of the house, and whenever the weather is favourable a free circulation of warm rather dry air must be afforded. Cease syringing the trees directly the fruit commences to ripen, and avoid a superabundance of moisture about the house, but moderate moisture is necessary for the health of the foliage. If a good watering is given at that time, and the surface is mulched, it will lessen the need of water during the ripening process, but trees with only limited space for the roots will need occasional supplies, and none must be neglected if necessity arise for its application. Trees swelling their fruit will require attention in stopping the young shoots at the fifth or sixth leaf, and thinning the strong growing shoots to admit light and air to the fruit and wood. Attend to syringing the trees daily, and water abundantly at the roots as often as required, employing weak liquid manure, especially where the borders are small.

*Unheated Houses.*—The trees are showing good crops, and will, with favourable weather, afford an acceptable supply of fruit in August and September. The roots being confined to narrow and well drained borders inside the house, they will require copious supplies of water, and the trees will need syringing twice a day in fine weather. In cloudy weather the afternoon syringing may be dispensed with, and in bright it may be performed early, with all the solar heat that can be shut in to insure the proper drying of the foliage before nightfall. The young



growths should be trained a good distance apart so as to admit light and air freely to the wood for insuring its ripening well. Avoid close stopping, as the results are the production of a number of late growths which do not get properly matured before the leaves fall. The best course is to secure firm, short-jointed wood. Allow the points of the shoots to grow up to the glass, and they will then form abundance of embryo Figs ready for swelling in the spring.

**Peaches and Nectarines.**—*Trees Started at the New Year.*—When the fruit has stoned the trees may be subjected to a higher temperature, but until that is completed they should not be kept in a higher temperature than 60° to 65° by artificial means, commencing to ventilate at 65°, and not allowing 70° to be exceeded without a free circulation of air. Secure the shoots as they advance in growth, leaving plenty of room in the ligatures for the shoots to swell properly, and remove superfluous growths, retaining no more than can have full exposure to light and air. If the shoots are crowded, thin them gradually as soon as the stoning is completed. Do not overburden the trees, but leave one fruit to each square foot of surface covered by them, vigorous trees having the fruit left a little closer. Maintain adequate moisture in the house after stoning, water the inside borders copiously, and mulch the surface with about an inch thickness of partially spent short manure. Outside borders must also be properly attended to in watering and mulching.

If it is desired to accelerate the ripening the night temperature may be maintained at 65° to 70°, 70° to 75° by day artificially, and 80° to 85° from sun heat, closing early so as to increase to 90° or 95°. In this high and moist atmosphere Peaches swell to a great size after stoning. With due precaution taken in having the fruit well exposed, raised with its apex to the light, it is very imposing in appearance, but scarcely so inviting or so well flavoured as that ripened more gradually in less heat and moisture, and with freer ventilation. Unless, therefore, the fruit is required to be pushed the ripening should be effected in a night temperature of 60° to 65°, 65° by day artificially in dull weather, and 75° with sun heat, closing at the latter with plenty of moisture in the house. Ventilate freely when the fruit is ripening, admitting a little air constantly.

*Trees Started in February.*—The fruit is now stoning, and the number must be reduced, leaving two on strong shoots, but one only on weakly growths. Retain fruits in all instances best situated for exposure to light and air. Thin the shoots where overcrowded, and remember that the more light and air the fruit is subjected to from the commencement the better will it be in colour and flavour when ripe. The temperature may be kept at 55° to 60° at night, 60° to 65° by day artificially, ventilating at 65°, fully at 70° to 75°, and closing at the latter with plenty of moisture. Assist weakly and full-cropped trees with liquid manure, but keep it from trees that are very vigorous, as it tends to gross growth, and may prove fatal to the stoning. Syringe the trees twice a day, and spare no effort to maintain the foliage in a clean, healthy condition.

*Trees Started in March.*—The fruit now swelling freely must be well thinned, but gradually, leaving two or three of the best placed on strong shoots, and proportionately less on weaker growths. Supply liquid manure to weakly trees, but top-dress vigorous with phosphatic manure, say a sprinkling of dissolved bones, 2 ozs. per square yard, occasionally, as they being more prone to cast the fruit in stoning should have water only. Remove all superfluous shoots, tying and training the remaining growths to the trellis as they advance.

*Late Houses.*—It can now be seen which fruits have most promise, therefore the thinning should be carried out promptly, leaving a few more only than will be required for the crop to allow for casualties. Examine the inside borders at least once a week, giving thorough supplies when necessary, and syringe the trees twice a day, except when the nights are likely to be cold. This more particularly applies to unheated houses, in which the syringing should be practised early in the afternoon or be omitted, for it is essential that the foliage become dry before night. Early closing may also be practised with a view to husband the sun heat.

**Strawberries in Pots.**—The latest plants will now be commencing to swell the fruit, and as the stems are usually long the berries should be supported clear of the pots with forked sticks, pointed at the stem end and pushed into the soil, the stem of the truss resting in the fork or a little below the fruit. Thin the flowers and the fruits. The centre fruit is always the largest, and to encourage these and others early thinning must be practised. Grand fruits are obtained in this way, seven fruits this year of Auguste Nicaise only being required to bring up a pound weight in their favour. Marguerite produces enormous fruit, five to a pound having been produced, but it spots seriously through its tender skin, and President also is very liable to damp and mould when ripening. The plants should have frequent supplies of liquid manure for swelling their fruit, giving it from the time the fruit commences to swell freely until it changes colour for ripening, when clear water, and not too much of it, only the plants must not flag, will be more suitable. When ripening the atmosphere must be kept rather drier and cooler than when the fruit is swelling, and it will then be less liable to spotting, the flavour be higher, and the aroma more pronounced.

#### THE FLOWER GARDEN.

**Commencement of Bedding Out.**—The summer-like weather has materially shortened the duration of various spring flowering occupants of the beds and borders, and will also have the effect of hastening the

refilling of these latter with the more tender plants prepared for them. As far as the state of the ground is concerned, that at the present time is warmer and in a better condition for the reception of tender plants than is often the case by the middle of June, and all we have to fear are cold frosty nights. These may not be noticed this season, but when the change comes the chances are frost, and perhaps hailstorms, will follow in the wake of heavy rain. There ought, therefore, to be no risks run, especially where there are few or no reserve plants to make good any losses. It is always a relief to get the bulk of the bedding plants, more especially those in pots, into their flowering quarters, and there is no apparent reason why the start should not be made at once if precautions are taken for protecting them if needed with evergreen branches, blinds, or mats. With a good supply of water near at hand the mistake is often made of using this far too freely. Enough should certainly be given to prevent the plants flagging badly, but the greater part of them, and Zonal Pelargoniums in particular, take more quickly to their fresh quarters, and are less likely to be injured by frosts when kept a little on the dry side at the roots for the first fortnight.

**Tuberous Begonias.**—If these are planted out early, provision ought certainly to be made for protecting them during cold nights, and a light shading during clear hot days would also prove beneficial. These plants are not suitable for hot and dry positions, but thrive admirably in the more low-lying beds; or say, where Zonal Pelargoniums usually grow too strongly and flower indifferently. The most exposed beds can, however, be made suitable for them. What they require is a fairly deep, well worked root run, plenty of decayed manure being forked in. Failing the latter use leaf soil. In addition they will also require to be freely mulched, this being done directly after planting. Old Mushroom bed refuse, leaf soil, and cocoa-nut fibre refuse are all variously used as a mulch, and answer well. Never crowd Tuberous Begonias, the best effect being produced by keeping the plants just clear of each other, the handsome foliage then showing off the fine flowers to advantage. Strong plants from tubers raised last season will give the best results, and these may be not less than 15 inches apart each way, while the strongest of those raised this season, and which can be moved out of boxes or frames with a good ball of soil about the roots, may be arranged 12 inches apart. A pretty effect is produced and an economy of plants be effected by disposing the Begonias another 3 inches farther apart, and carpeting over the intervening spaces with either Mesembryanthemum cordifolium variegatum or Sedum glaucum, these cool trailing plants also obviating the necessity for mulching the beds. Dwarf Lobelias are suitable for mixing among or edging Begonias, while if really imposing effects are desired fill large beds principally with Begonias, dotting Cannas, variegated Maize, Acacia lophantha, standard Fuchsias, Palms, Dracaenas, and such like thinly among them. The erect flowering varieties are the best for bedding out; while those with drooping flowers are very effective when fringing raised beds and in vases, always providing they are kept well supplied with moisture.

**Other Moisture-loving Plants.**—Violas are next to useless for hot and dry positions. They ought to be put out early, being given the benefit also of a well-manured root run. If variegated Zonal Pelargoniums of any kind are dotted freely among Violas the effect is pleasing, and there will be no blanks very observable even if the latter do fail in August. Shrubby Calceolarias are also unsuitable for hot and dry positions, and should have the sites well prepared for them. See that they are in a thoroughly moist state at the roots when moved, and they must not flag through want of water at any time. Polemonium coeruleum variegatum is quite a moisture-loving plant, and very effective too when properly treated. Verbenas, to succeed well, should have deeply dug, well manured sites, a mulch of some kind not being wasted on them. If clean, healthy young plants are planted on this well prepared ground they will flower grandly and attract, because not often seen in good condition. Fuchsias will not long grow and flower freely unless given the benefit of a rich root run and plenty of moisture. Dahlias also like plenty of manure and moisture.

**Plants for Drier Sites.**—Zonal Pelargoniums are the most effective in fairly good soil and open positions. Heliotropes, Ageratums, Iresines, Coleuses, Golden Pyrethrum, Lobelias, and the various annuals raised under glass, all thrive well in a medium soil, and the bulk of them will stand drought fairly well after they are once well established. Petunias are suitable for quite the driest beds, and Marguerites may be associated with them advantageously. Dwarf Nasturtiums, if grown on rather poor soil and given good room, are remarkably showy, and stand both wet and dry weather well. If the beds are in a very dry state when they are to be filled give them a good watering a few hours in advance of planting, and the work can then be done easily and properly.

**Late Raised Plants.**—When boxes or pots are scarce or space limited many of the late raised plants are frequently kept very close together much longer than is good for them, and unless something is done to obviate this they plant out badly. Pots and boxes being liberated owing to the hardier or earlier raised plants being put out in the beds, these might well be refilled with those raised later. Especially ought Iresines and Coleuses, now crowded in cutting pots or pans, to be placed singly or in pairs in small pots, and if kept in gentle heat till the end of the first week in June, they will have grown considerably and be well rooted. Being duly hardened off they will be ready for the spaces left for them in another week, the extra trouble being amply compensated for almost from the first. It is not yet too late to root more tops of Iresines, Coleuses, and Alternantheras, and this should be done if more plants are wanted.



# THE BEE-KEEPER.

## APIARIAN NOTES.

### HINTS TO BEGINNERS.

At this season of the year a prime swarm contains the old queen, and is likely to swarm again in about six weeks hence if the weather is favourable. This second issue is known amongst bee-keepers as a "virgin" swarm, and is as likely as not to have a virgin queen, but it will be as well for the future if the novice regard it as the old one; then one or more after swarms may be expected, and these should be kept as stocks. If "C. W." (page 385) puts one of these in the frame hive it will give him a fair start with every chance of success another year. Should the hive not swarm by the end of June he should drive the bees, depose the old queen, and introduce a young fertilised one.

Whenever the honey is plentiful in the straw hive and the bees working, put on a small wooden super about 8 inches square by 4 inches deep. These supers ought to have bars, so that should a good season occur, they may be storified. An adapting board may be used between the hive and super, with narrow slits at the extreme sides. This prevents the colouring of the comb, also to a great extent the queen ascending, and prevents the bees fastening their combs to the crown of the hive. If the hive is dome-shaped support the adapting board, so that it lies level and solid. A piece of clay is handy for that purpose. Assuming the hive swarms, drive the bees three weeks afterwards, utilise the honey, and feed with syrup—the best sugar, dissolved with equal weight of soft water, stirred while on the fire, and boiled a minute, or even less. The most practical and reliable paper on bees is the *Journal of Horticulture*, and questions are not answered by theorists, but successful bee-keepers.

### THE MOST PRODUCTIVE HONEY BEES.

Perhaps the most satisfactory pure bred bees are the Carniolans. They are prolific, good workers, and honey gatherers, make beautiful white comb, and are very mild tempered. Unhappily care has not been taken to preserve the race, and it appears difficult to get the pure breed. *Cross-bred Punics* have, on the whole, surpassed all the other varieties—i.e., whether they be Carniolan queens and Punic drones, or *vice versa*. The pure bred Punics had not a fair trial by myself last year, but in 1891 the finest supers of Heather honey were from pure Punic bees. When intending bee-keepers cannot obtain a particular race of bees they must take the best they can find in the neighbourhood. This is a sensible plan for beginners, and they should give no heed to those who allege that the old British bee is still to be had in its pure state. It suits interested people to advocate them, but they are extinct in this country.

### THE GREATEST HONEY YIELDS.

These have been afforded by crosses on the non-swarmer storifying system, and in short seasons on the old two queens in one hive system. In 1860-61-62, when in many places there were no honey, I saw huge supers from 45 to 50 lbs. in weight. But with all kinds of hives the results are of necessity influenced by the season and flowers.

In the spring, if I remember rightly, of 1878, old stocks swarmed three times, which increased each stock to four during the month of May. By June, and to the middle of July, the old stock again swarmed twice, and so did the prime swarm as well as the first after swarm, raising the number to ten; the season was prolonged and fine. Seven of the number were put down and three of them kept as stocks; the former weighed from 75 lbs. to 115 lbs. They were in straw hives, the tare of each being about 12 lbs., so that the nett contents of the seven hives from the one stock in the same year amounted to 665 lbs. of honey. This stock was situated on the Duke of Hamilton's estate, about three miles from where I live. At Arran in 1863 there was a similar case of increase and yield of honey, which sprung from a stock of crossed Italians. A moderate increase of stocks will be found one year with another to be the safest course to pursue.

### THE BEST HIVE.

The Lanarkshire storifying hive now being adopted in some form or other in this country and America is, I am able to say, after upwards of forty years' experience with it and others, the cheapest and best hive. It is easily made by amateurs, and, moreover, is the only safe hive for taking to the Heather and for wintering bees. I will endeavour to advise beginners, but they must remember that their own judgment must be exercised to the fullest extent. While

they are getting advice a little thing may compel them to depart from a prescribed course, as it is impossible to anticipate all the movements of bees.

### EARLY SWARMING AND HONEY.

If swarming began in England on the 21st April Scotland was not far behind. From previous reports I believe some swarms would be as early on some parts on the Clyde side. On the first day of May there were swarms at Brownlee, Barrhead, Blantyre, and Bowling. At Crossford and other places in Lanarkshire large quantities of honey of the first quality were taken in April.—A LANARKSHIRE BEE-KEEPER.



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Fungus in Mushroom Bed (T. B.).**—The name of the fungus producing Sclerotia in Mushroom bed, mentioned on page 385 last week, is *Xylaria pedunculata*.—W. G. SMITH.

**Hardy Azalea (C. H.).**—The flowers were quite withered on arrival. The colour appears to be darker than that of Anthony Koster. Your shrubs must have been highly effective.

**Proliferous Calceolarias (J. Haffenden).**—We have seen many similar examples of what appears to be two flowers on one stem, but there are really two stems or pedicels united, and the furrow is quite apparent. It is a case of fasciation.

**Beetle and Plants (J. D., Duffryn).**—The beetle is evidently the common cockchafer (*Melolontha vulgaris*), which has of late years seemed to be less abundant than usual. Neither moth nor fly was discoverable in the mixture, but the former is probably the pea-green Oak moth (*Tortrix viridare*); and the transparent winged fly referred to may be some species of *Ephemera* or May fly. This is, however, only a supposition. The flower bud and small leaf are wholly insufficient for identification. If further specimens are sent they must be larger, more advanced, and not enclosed in a package with insects.

**Liquid Manure for Strawberries (L. F.).**—There is no better liquid manure for Strawberries than the drainage from manure heaps or sewage, but when these are not obtainable guano water may be used, and has often been applied with great benefit. Half an ounce dissolved in a gallon of water is sufficient for plants in pots, but twice that quantity may be applied safely to established plants that need extra support in the open air. It should not be poured on the fruit or leaves, only on the soil, copiously, and if this can be mulched afterwards for the retention of the moisture it will be an advantage. It is an excellent plan to give liquid manure as soon as the fruit is set, then cover the ground with straw or other suitable material for keeping the fruit clean and preventing the evaporation of moisture from the earth. The use of liquid manure should be discontinued when the fruits commence colouring.

**Introduction of the Moss Rose (Amateur Rosarian).**—You ask for information regarding the introduction of the Moss Rose. We have referred to many old authorities, and the results of our search are that Parkinson in his "Paradisus," published in 1629, Rea in his "Flora," published in 1665, and Bauhin in his "Pinax," published in 1671, enumerate many Roses, but the Moss is not among them. It was introduced or raised in Holland probably at the close of the seventeenth century, for Dr. Martyn, in his edition of Miller's "Gardeners' Dictionary," says it is in Furber's catalogue in 1724. We have seen a copy dated 1727; it is entitled "Catalogue of English and Foreign Trees Collected, Increased, and Sold by Robert Furber at his Nursery over-against the Park-Gate at Kensington, near London." Faulkner in his "History of Fulham" says that Mr. Rench was the first to introduce the Moss Rose into this country, the original plant of which is supposed to have been brought from Holland. Rench lived at South Field Farm, near Parson's Green, a farm possessed by his family for two centuries. He was buried in Fulham Churchyard, where there is this inscription





## ORGANISATIONS.

ORGANISATION is the order of the day, isolated action, broadly speaking, fast becoming obsolete. This applies to industries and "interests" of various kinds with which many people are connected. Isolated individual action there must always be on the part of students and specialists who think and work out problems that lead to inventions of various kinds, some fanciful, others having important bearings in the scientific and commercial world. It is feared by some able men that organisation is inimical to individualism—that it tends, to so say, to produce a machine-like action in humanity, and an uniformity in modes of thought and intellectuality. But may not the reverse be the case? Is it not the fact that some of our greatest men have mixed much with the multitude in their respective circles? and may they not thereby have received new thoughts and been impelled to higher aspirations and greater research into subjects which have become indissolubly connected with their names? Be that as it may, organisations of individuals for the furtherance of legitimate objects have been of enormous, indeed incalculable, benefit to the nation. That mistakes are made by associations, unions, leagues, or guilds, call them what we may, goes without saying. They are incidents in the lives of men whether they act in an individual or corporate capacity, and the objects in view are then retarded, loss incurred, and it may be suffering endured. These are the penalties of errors in judgment, and their occurrence should, and in the long run does, lead to the exercise of greater prudence on the part of the public as a whole, for sharpers there will ever be so long as there are dupes, as one cannot exist without the other, and so far combinations do not seem to have materially reduced either of those distinct "individualities."

Organisations in the form of societies established for mental or moral improvement and professional advancement are altogether worthy when worthily conducted; while clubs for wholesome recreation and physical exercise, in which the different classes of society meet in friendly association, have a decidedly beneficial tendency in the cultivation of social amenities, which play an important part in making life agreeable, and moulding the habits of the community. We are not led into this strain of thought by Messrs. Wood & Son's great idea on page 390 last week. In respect to that we adopt a waiting policy, with the remark that some such amalgamation as they propose has been satisfactorily effected in some Continental cities; but whether we possess an organisation of horticulturists sufficiently strong and cohesive to form a substantial element for purposes of negotiation is a question for consideration. It was not that proposal, but the *Journal* of the "Kew Guild" that brought the subject of organisation to the fore, and particularly some introductory remarks by Mr. W. Watson, Assistant Curator, in the form of a letter to Mr. W. T. Thiselton-Dyer, Director, asking his sanction of the project, and this gentleman's admirable reply. Mr. Watson writes:

Kew is popularly known as a great botanical institution possessed of a garden wherein is grown the most comprehensive collection of plants ever brought together in any country. Her influence in science and commerce has long been acknowledged as pre-eminent among botanical establishments. Kew is also a great training school for horticulturists, but the important part she plays in horticulture has not hitherto been generally recognised. The

Kew Guild will, we think, go a long way towards showing how much Kew has done and continues to do, in the development of scientific horticulture, not only in the British Empire, but in all the civilised countries in the world. Our *Journal* will reveal the whereabouts and positions of all living Kewites, as far as they can be ascertained. Kew "graduates" are everywhere; as directors, curators, superintendents, head gardeners, as botanists, professors, Fellows of the Royal Society, the Linnean, and other great scientific societies; wherever botany or scientific horticulture is encouraged, there Kewites are sure to be found.

We have made a rough calculation of the number of men now alive who have been employed as gardeners at Kew, and find there are probably about 500. They were all young men when they entered Kew, and it is only natural that whilst here they formed friendships and acquired an interest in and affection for their "high school" which did not die with their departure to other places. The desire to know of the whereabouts and career of their fellow workers whilst at Kew, and to learn something of the way things are done in the Garden now is very general among Old Kewites, and sometimes finds expression in letters of inquiry to present members of the staff, but this is necessarily an unsatisfactory method. Our Guild and *Journal* will remove all difficulties of this kind. We shall now be able to shake hands with each other no matter by what distance of time or space we are separated.

The Kew Guild is the offspring of the Kew Mutual Improvement Society, which has been in existence some twenty years, and which is devoted to essays and discussions on professional subjects. This Society is now most popular with the garden staff, and is looked upon as being one of the most valuable means of professional improvement. It is at the same time, to all intents and purposes, the "Club" of Kew men. Old Kewites retain an affectionate feeling for "the Mutual," as is abundantly shown in their correspondence; inquiries as to the proceedings and prosperity of the Society being frequent. This desire to keep in touch with each other found expression last year in a resolution to take steps to unite by some means all Kew men, and it was finally decided to form a Guild and publish a *Journal* annually. We hope in time to be in a position to hold an annual meeting, a general muster, a Club day at Kew, or somewhere near. An annual dinner might be arranged at which all the members possible might be present. Any suggestion as to the best means of making our Guild a genuine union of hearts, and as far as possible of hands also, will be most welcome.

To the scheme as above foreshadowed the Director of Kew gave his ready adhesion in a letter to Mr. Watson, which we think is worthy of a wider circulation than it can be expected to have in the first excellent issue of the *Journal* of the "Kew Guild." Mr. Thiselton-Dyer writes:—

I think the idea of the proposed Kew Guild is a very excellent one. Such an organisation cannot but have the effect of consolidating the *esprit de corps* which already exists amongst our young men, and its doing so will, I do not doubt, be of great benefit to the establishment.

It has often struck me that the young men—of whom there is now a not inconsiderable body employed—who come to Kew for a period of advanced training and instruction, enjoy in no small degree much the same advantages as in other classes of the community are afforded by university life. It is generally considered that the most important of these are the formation of character and the reception of those impressions which determine an intelligent interest in, as opposed to a merely mechanical pursuit of, the occupations of life. The age at which young men come to us is about the same as that at which others go to the universities. It is the age when the responsibilities of life begin to emerge above its horizon, and it is the age when, for better or worse, the future career, as far as it depends upon the influences under which a young man is thrown, pretty distinctly shapes itself.

I have always felt that a great responsibility falls upon the staff in doing what can be done to maintain a healthy and somewhat stimulating tone throughout the establishment. As you know we do not "coddle." We treat our young men as "men," and expect them to work out their own salvation. We wish them to be manly, self-respecting, and strenuous. We put, with the aid of the Government, what help we can in their way, and leave them to make an intelligent use of it.

Just as at the universities, one of the great advantages of Kew, as it seems to me, is the association within it of a large body of young men of the same age and with the same pursuits. Such an



association is itself an education and a preparation for the bigger world of life. Rubbing together in the work of the day, in the lecture-room, the reading-room, the Mutual Improvement Society, and the cricket-field, they learn to appreciate and understand those good personal qualities which enable capable men to advance themselves with modesty, and everyone to get through the business of life without undue self-assertion or individual friction. This is the great merit of university training, and something of it I am sure is attained at Kew.

Out of this grows one of the greatest charms of life, the formation of permanent and valuable friendships. But stay at Kew is short, and I have always felt that some organisation such as you propose would serve the double purpose of keeping Kew in touch with the men who have passed through it, and of enabling the men themselves to keep in touch with one another. Sometimes in turning up old files of correspondence I have come across letters from distant parts of the world from men who were once with us. And nothing has encouraged me more as Director than to see the spirit of loyalty, not to say affection, which always animates Kew men towards their *Alma Mater*.

Men go from us to all parts of the Empire, some in official, some in private employ. The maintenance of correspondence with every individual would be impossible. Still, to have a record of their whereabouts, to rescue their names and work from the oblivion which sooner or later falls on everything human, will be of interest to everyone concerned.

After all, it is interest which makes work enduring, and anything which stimulates it in the long run well repays the trouble.

Kew has now completed the first half century of its existence as a national and public institution. It has accomplished work already of which any institution might be proud. Its influence through its men to every part of the world. That it is so strong arises in great measure from the fact that the uniform tradition which has animated every member of the staff from top to bottom is to work self-sacrificingly for Kew rather than for himself. Officials and employes arrive and pass away; the institution remains, and grows in usefulness, in strength, and in beauty. All who have had a hand in the work are content that that should be their "record."

No one will find fault with us for reproducing the above letters, and if any hitherto undiscovered "Kewite" should be reached through our columns, he will, we suspect, hasten to be enrolled a member of the Guild, and recognising the salutary objects in view, we wish the organisation complete success.

## UTILISING SURPLUS FRUIT AND VEGETABLES.

REPORTS concerning the extent of the hardy fruit crops are somewhat conflicting, but there appears to be a great abundance in some localities and a fairly good promise in others, these last being the greatest sufferers by frosts, which were very severe during the flowering period. Seeing what immense additions have of late years been made to the breadths of ground wholly or principally devoted to fruit culture, there is every prospect of the supplies this season being largely in excess of anything yet recorded, and the chances are, therefore, that prices will rule lower than usual. With an increasing demand for good wholesome fruit, and which, as yet, is largely met by importations, it seems a great pity that any should be wasted for want of a little enterprise and skill on the part of those who have so much at stake. That a good market can be found for either first-class fruit preserves, bottled or candied fruits, I have not the shadow of a doubt, yet I advise no one, without any previous experience, to commence utilising their surplus fruit, or any, say, that cannot be profitably sold in a fresh state, to good account on a large scale, or they may get into the Bankruptcy Court before they know what they are about. First gain some practical experience on a small scale, and then launch out deeply and boldly. It is next to useless for persons to expect to be taught delicate manipulative acts from information supplied through the medium of either the press or private correspondence. Many useful hints may be obtained in that way, but it is only by practical experience, gained first on a small scale, that big ventures can be safely piloted to success. Much useful knowledge could be gained by a visit to an Italian warehouse or large grocery store, where all the best samples of preserves and bottled fruits may be seen, and in particular a knowledge of the latest styles, both in the jars and bottles, with the different methods of making these air-tight in vogue. Those who at present only contemplate going to work on a small scale may be content with more homely methods of bottling, stopping, and such like, and they

will then be gaining much useful experience, and be better able to appreciate the more advanced practices of experts.

Judging from inquiries which evidently have reached the Editor of the *Journal of Horticulture*, beginners are somewhat at a loss how to go to work, even on a small scale, and more especially as to the time that the different kinds of fruit and also vegetables require to be subjected to the boiling or steaming process. On page 368 there are several useful hints given as to how to proceed in the work of bottling fruit on a large scale, and these with slight modifications would answer equally well for the modest beginner. Green Gooseberries, ripe Apricots, Cherries, Currants, Green Gages and other Plums, Damsons, Raspberries, Strawberries, Peaches, and small whole and quartered large Pears are all suitable for bottling, for future use in pies and such like, and the method of procedure should be very much the same in every case. I believe some of the larger firms who bottle these very extensively fill with water only, but the old housewife's fashion of surrounding the fruit with clarified syrup is what I would still recommend. This syrup can be prepared as follows:—To every 3 lbs. of loaf sugar add the white of an egg and 1 quart of water, all being whisked together in a stew pan, then set to boil gently for five minutes, a little cold water being added occasionally. After being strained through a cloth it is ready for use. The fruit to be bottled should be quite sound, nearly ripe Plums being preferred to any full ripe or cracked. These, also Apricots and Peaches, must be halved and the stones taken out, while the stalks have to be removed from all. After all have been neatly packed in the usual wide-necked bottles or the more improved jars and bottles alluded to on page 368, filling them to the neck, and then after pouring enough syrup to well cover the fruit they must be corked down tightly. Machines can be had for the latter process, bottles being corked in Messrs. Beach's factory very rapidly with their aid. The next proceeding should be to pack the bottles in either a stock-pot, large kettle, or saucepan deep enough to admit of their standing upright in cold water up to the neck. After packing haybands round them to prevent their knocking against and cracking each other set the pot over a fairly brisk fire. Rather more time is allowed for some fruits than for others. Thus, after the boiling point is reached in the case of Gooseberries, another five minutes gentle simmering is needed; Currants, Raspberries, and Strawberries being allowed ten minutes, Apricots and Cherries twelve minutes, Plums and Damsons, Peaches and Pears one-quarter of an hour, simmering in each case after boiling point is reached; the bottles to remain in the water till nearly cold, and be then duly wiped dry, faulty corks made good, and air be further excluded by means of either a covering of wax or a piece of tinfoil. The glass jars having a neck flange, rubber ring, and screw top are a great improvement on the old bottles, and would doubtless, if advertised, meet with a great sale.

Vegetables, now that the drought has broken up will soon recover their lost ground, and most of the kinds suitable for preserving will doubtless be plentiful enough. French and Runner Beans are always appreciated, and the former, especially, might well be extensively grown, especially for storing. In all probability it would pay well to prepare them largely for winter use, and those who can place a good article on the market would have the monopoly as far as foreign competitors are concerned. A good recipe for preserving them is as follows:—Pick and string any given quantity of young Beans, and throw them into a large untinned copper preserving pan containing boiling water strongly impregnated with salt, cover them with fresh Vine leaves, and set them aside for twenty-four hours. They should then be drained upon a sieve, gathered up in neatly arranged bunches, and packed closely together, in either jars, bottles, or tin boxes, filling up with fresh water slightly flavoured with salt. Cork down, or otherwise make these air-tight, leakages also being remedied, and store in a cool place till wanted for use. Peas and Broad Beans are worthy of being extensively preserved, and for these also I have a recipe that will be hard to surpass. Tins or cans have hitherto been principally used for these, and those who intend trying what they can do in the way of preserving Peas should first obtain a sample tin or can from an Italian warehouse or grocer, and get a local tinman to copy and make the requisite number with their tops ready for soldering down complete. Fill these with fresh, newly shelled Peas; cover with water to which a teaspoonful of salt, or enough to well impregnate it has been added, and then solder or screw down the tops as the case may be. Place them in a stock pot or saucepan, cover with boiling water, and boil them fast for half an hour, and then withdraw. Examine the tins for leakages, solder over, and store in a cool dry cellar. If strong glass bottles or jars can be procured, these, as explained on page 368, are decidedly preferable. Carrots in a young state are largely preserved, and a very tender dish is available accordingly during the winter. These should be closely trimmed lightly scraped, and



dropped into hot water according as they are done. When enough are ready, place them in a stewpan with water sufficient to cover them, adding fresh butter at the rate of 1 oz. to the pound of Carrots, and salt to season. Boil the Carrots in this till half done, arrange them closely in jars or tins, fill with their own liquor, fasten or solder down, boil for half an hour, and store in a cool place.

Mushrooms—"buttons"—can be preserved against the time when fresh ones cannot be had. They must be quite fresh and firm for the purpose, be washed, packed in boxes or jars, and these filled with water, to every quart of which 4 ozs. of butter, 1 oz. of salt, and the juice of three Lemons has been added. After being duly fastened or soldered down they ought to be boiled for a quarter of an hour. If anyone can add to or improve on the foregoing recipes they will confer a great favour on myself and various other readers of this paper.—A MARKET MAN.

### FRITILLARIAS.

THE genus *Fritillaria*, though it contains many plants of little more than botanical interest, is on the whole a very useful one, and is deservedly popular with all lovers of hardy bulbous plants. There are, according to the "Genera Plantarum," upwards of fifty distinct species, some of which have a considerable number of varieties. The genus is pretty widely distributed; the majority of the species are natives of South Europe and Western Asia, a few are found in North-West America, while India and China are also represented. Only one species, *F. meleagris*, the common Snake's Head, is a native of Britain. Naturally, in so large a genus, with such a wide geographical range, there is considerable diversity in form, habit, and colour.

With very few exceptions *Fritillarias* are easily cultivated. Most of the species may be grown in the mixed border. The Crown Imperials (*F. imperialis* and vars.) may also be utilised for shrubbery borders or for naturalisation. The smaller kinds should have a place to themselves in a sunny border in a sheltered position. The more valuable and refractory of the smaller species may be planted out in cold frames. A deep sandy loam is the most suitable soil for all the species, and whatever position be assigned them they should be disturbed as little as possible, as they are very impatient of interference with their roots. They need not be lifted oftener than every three or four years, and they should then be replanted immediately in fresh soil. Autumn is the best time for this operation. The Crown Imperials should be planted at least 4 inches deep, as the stems throw out roots above the bulbs; half this depth will be sufficient for the smaller kinds.

*Fritillarias* may be grown in pots in cold frames if desired for the decoration of the greenhouse in spring; but they will not bear forcing, and do not succeed so well in pots as in the open ground. The only advantage of pot culture is that the plants bloom a little earlier.

Propagation is most readily effected by offsets, which most of the species produce freely if left undisturbed. These may be collected when the old bulbs are lifted, and should be planted in rows in nursery beds until they attain flowering size. Some of the species ripen seeds freely, and these may be sown in pans filled with sandy soil. They must not be shifted during the first year, but may afterwards be planted out. This method is not generally practised, however, as seedlings take from four to six years to reach the flowering stage. The following are some of the most noteworthy species:—

*F. ARMENA*.—This is a dainty little plant about 6 inches in height, with small, campanulate, slightly drooping flowers. There are two forms of this species, one with soft yellow flowers, and the other with brownish-purple flowers. A native of Armenia; introduced in 1878. Flowers in April.

*F. AUREA*.—This species has bright yellow bell-shaped flowers, about 1 inch deep, and is a desirable little species. It is about 6 inches in height. Introduced from Cilicia in 1876.

*F. BREVICAULIS*.—Another dwarf species, seldom attaining a height of 8 inches. The flowers, which are produced singly or in pairs, are of a tawny colour, and are not very large.

*F. DELPHINENSIS*.—A South European species, 6 to 12 inches in height, and is useful for naturalisation. It has purple flowers, spotted with yellow. *F. d. Burnati* is a handsome variety of the above, with large solitary drooping flowers of a brownish-red, chequered with pale green. Introduced in 1879; flowers in March. *F. d. Moggridgei* is also a charming variety, about 1 foot in height, which flowers in August. It was introduced in 1880, and has large solitary flowers of a bright yellow spotted with brown.

*F. IMPERIALIS*.—The Crown Imperial is the giant of the genus, and is too well known to require a detailed description here. It is one of the very oldest of our garden plants, having been intro-

duced from Persia in 1596. There are several varieties of this species differing principally in colour. In the variety *aurea marginata* every leaf is margined with a broad yellow band. The flowers of this species have unfortunately a somewhat disagreeable odour.

*F. LATIFOLIA*.—This species is admirably adapted for naturalisation, as it will thrive in any open situation. It is a native of the Caucasus, and was introduced as long ago as 1604. It is about 1 foot in height, and the large flowers are pendulous. April and May is the flowering season. There are numerous varieties varying in colour from yellow to black.

*F. MELEAGRIS*.—This is a native species, and is the most useful member of the genus, as it will thrive in almost any



FIG. 74.—FRITILLARIA TULIPIFOLIA.

situation, and is also serviceable for pot culture. There are innumerable varieties of this species in various shades of colour, and all more or less chequered, as in the type. There is also a variety with double flowers, but this is still a rare plant.

*F. PALLIDIFLORA*.—A Siberian species; about 1 foot in height. It is very distinct; the yellow flowers, which are beautifully chequered internally, being borne in terminal clusters. Introduced in 1880.

*F. PUDICA*.—This dwarf Californian species is one of the very best. It does not, however, possess a strong constitution, and many have failed to grow it satisfactorily for any length of time. It is about 8 inches in height, with an upright leafy stem and large golden yellow flowers. It blooms in May.

*F. RECURVA*.—The showiest of the *Fritillarias*, but, like the preceding species, it is not quite so easily grown as some of the others. It seems to be affected by local influences, as some growers have entirely failed with it while others declare it to be as easily



managed as any. It certainly is not a robust plant, and it requires protection during winter, but it will well repay a little extra care. The flowers are large, and have the appearance of Lilies owing to the perianth segments being considerably recurved; they are bright scarlet freely spotted with yellow, especially internally, and are borne two to eight in a terminal raceme. It is a Californian species, grows about 2 feet in height, and flowers in May.

*F. TULIPIFOLIA*.—This is a dwarf Caucasian species, remarkable chiefly for the peculiar glaucous blue colour of its flowers externally; internally they are brownish red. It is a variable species as regards size. Introduced in 1872. The illustration (fig. 74) represents it.

A new species from Smyrna has been named *F. Whittali*. In size and general appearance it resembles *F. meleagris*, except that the perianth segments are slightly recurved and not incurved as in the latter species. The flowers are of a greenish colour chequered with brown.—A. B.

## THE INFLUENCE OF A GARDEN.

MUCH that is elevating might be written upon the soothing peacefulness of a garden, and the contrast its calming influence presents to the nervous strain and peace-shattering intensity of city life. It is difficult indeed for a jaded denizen of the modern Babylon, unless he is a happy inhabitant of its almost rural suburbs (which, however, are not London), to conceive of the calm joy which a fair garden, situated in some tranquil, sequestered region, can minister to the mind. Here (Wigtonshire) the only sounds which come to my consciousness of an evening in May are the distant, muffled roar of the immemorial ocean, and the harmonising strains of the woodland singers—of the thrush and the merle, mezzo-soprano and contralto; the deep, intensely musical meditations of the ringdove, expressive of passion, strangely mingled with repose; sometimes the skylark, a singer of exceptionally high register, with a suddenly asserted supremacy, such as that of Ilma de Murska or Adelina Patti, soars impetuously above his sylvan contemporaries, like a spirit from his nest among the dewy grass, floating on waves of music to the skies. Anon the annual Cuckoo, who is always impressive in virtue of his possession of a unique individuality, and what Wordsworth entitled “a wandering voice,” arrests our attention, even as his forefathers were wont to do in the sunny days of childhood, with a sovereign sound.

It would be almost superfluous to quote from their writings the testimony of the greatest and most reverential thinkers to the tranquillising blessedness which a garden can afford; the benignant rest it invariably brings to the sadly wearied hard-wrought brain.

The purest, sweetest hours of Cowper were spent in his garden, and imagination loves to picture him there. Though Burns was not a gardener he was pre-eminently a “born” poet, and therefore also (for the greater circle includes the lesser) a lover of flowers. He had that instinct for the exquisite and ennobling in Nature which invariably characterises much more than mere mechanical or practical capability. His “Daisy,” as I can testify, grows almost as spontaneously in old-fashioned or even modernised gardens (where Nature has not been wholly excluded), as it does in the fields. He should have been a gardener rather than an agriculturist who wrote that sublimely pathetic picture of this glorified flower.

“Alas! 'tis no' thy neebor sweet,  
The bonnie Lark, companion meet,  
Bending thu 'mang the dewy weat  
Wi' speckled breast,  
When upward springing, blythe to greet  
The purpling East.

“Cauld blew the bitter, biting North  
Upon thine early, humble birth;  
Yet cheerfully thou glinted forth  
Amid the storm;  
Scarce reared above the parent earth  
Thy tender form.”

James Montgomery, too, had the horticultural instinct, deep reverence for Nature, and a constant consciousness of her divine significance; and he also, like Burns, has crowned with that halo of deathless interest, which only a supremely gifted singer can confer, some of our lowliest and loveliest flowers.

As much, and perhaps more, may expressively be said of Wordsworth, the High Priest of Nature, who terminates (and sublimates) his loftiest inspiration—the great Ode to Immortality—with those memorable lines:—

“Thanks to that human heart by which we live,  
Thanks to its tenderness, its joys, its fears,  
To me the meanest flower that blows can give  
Thoughts that do often lie too deep for tears.”

I am not quite certain that some of our modern gardens, with their geometrical lines of artificial beauty which would gratify Euclid much more than Linnaeus, their formal gorgeousness of colouring, their closely clipped deformed Yews, and their all-prevailing barrenness of whatever is umbrageous, sheltering, or tranquillising, would have been gratifying to such passionate lovers of Nature as Cowper and Wordsworth. It is not, indeed, advisable in the arrangement of a garden to be too conservative; to have its borders so thickly crowded with overgrown bushes and dense flowering shrubs as to exclude from the noblest of modern Rose trees the pure light which they love, to render them the habitations and secure retreats of myriads of insects, which are a terror to every gardener who is working beneath their shade. But, on the other hand, let us not be too radical in our horticultural systems; let us be reverential when dealing with venerable trees, planted by loving hands now mouldering in the grave, for perhaps after all the unexpected beauties of the gardens of our forefathers, which met us at every turn of their winding, shadowy ways were more productive of joy to the artistic nature than the meretricious splendours of modern Art.—DAVID R. WILLIAMSON.

## HOEING AMONG VEGETABLE CROPS.

HOWEVER much we may be inclined to lament the long-continued drought, which will probably for years to come be remembered as a phenomenal occurrence, all must admit that it has been attended by advantages as well as drawbacks. Few will remember a springtime so favourable for preparing the ground, keeping young crops free from weeds, and getting the whole of the vegetable quarters into such a high state of culture as to render the work of keeping down weeds during the summer months a much less troublesome affair than it has been during the last few seasons. This is an advantage not to be lightly esteemed, for when once weeds are allowed to get the upper hand a vast amount of extra labour is incurred in eradicating them and their progeny, to say nothing of the injury done to crops in the early stages of growth, and the wastefulness of impoverishing the land by useless robbers. When, however, the surface of the soil is constantly stirred with the hoe, and the weather is bright and hot, there is but little opportunity for these robbers to become very voracious.

All successful cultivators, no matter whether they are gardeners or farmers, owe much of their success by first observing the great advantage to be obtained by constantly stirring the soil, and then turning that knowledge to practical account. Who has not noticed the rapid progress made by crops of all kinds when the hoe is kept constantly going among them, even when not a weed is to be seen? Many believe this is entirely due to the fact that by so doing weeds have no chance of establishing themselves, and the whole fertility of the soil is thus left for the use of the crops. The satisfactory state of affairs above indicated must, however, be attributed in a great measure to other causes; for although the prevention of the growth of weeds is one of the first principles upon which successful culture is founded, this practice does not in reality help the crops forward, but simply holds in check other vegetation which, if left, would impede the growth of them. Scientific research has proved that the very means we adopt to destroy these enemies of cultivated crops, at the same time places at the disposal of those crops a vast store of easily assimilated food. Although we necessarily place large quantities of manurial agents in the soil to replace the constituents drawn from it by our crops, yet it is nevertheless a fact that they derive the principal portions of their food from the air. It is thus clearly apparent that every time we stir the soil, air, and therefore food, is freely admitted; when once this undoubtedly fact is fully recognised by every tiller of the soil this free but indispensable food will be taken advantage of more fully.

Great as the above may seem, there are yet other benefits to be obtained by frequently stirring the soil. Spring crops are forwarded in a surprising way by the same practice, especially when the weather is bright, after a cold and protracted winter. The soil is then in a cold and wet condition, and takes much longer to be raised a few degrees in temperature than the atmosphere does. It is therefore easy to perceive that a few hours spent in hoeing among advancing crops lets in the air which has been heated by sunshine, causes the roots to be drawn to the surface to work freely among the warmer soil, and afterwards to penetrate deeper as the mass of soil becomes gradually heated. In hot dry periods such as we have lately experienced, a free use of the hoe is of immense benefit to crops generally, by checking evaporation in a way so well described by an “Old Gardener” in his interesting leader (page 329.) Of this I have had ample opportunities of judging recently, both in the flower and kitchen gardens, as it is only by persistently following that practice that many plants which could not be either



frequently watered or mulched have continued to make good progress, in spite of light soil and continued drought. Newly planted breadths of Lettuce, Cabbage, and Cauliflower, after receiving a few waterings have been so treated with good results; Onions, Carrots, Parsnips, Turnips, and Spinach have been hoed regularly since the young seedlings were first visible. In fact, our great aim has been to keep the hoe going in all directions when the state of the crops would admit of it, being fully aware that the practice is fraught with the advantages above enumerated, and that soil free from weeds and loose on the surface is in the right condition to receive full benefit from the rain when it comes.—H. DUNKIN.

## WINGLESS INSECTS OF THE FLOWER GARDEN.

(Continued from page 372.)

If we are to accept as correct sundry paragraphs which appear in some periodicals, not only during the "silly season," but at other times, the glow-worm beetle is much commoner than naturalists suppose, and often turns up in very unlikely spots. On investigation, however, it is frequently proved that the writer of a note on the appearance of a glow-worm is mistaken in his belief, the creature he has seen not being either the larva or beetle of the *Lampyrus*, the true glow-worm. One or more species of centipede, which are of common occurrence, have also the power of luminosity, though in a less degree as a rule, and can leave part of their light behind them upon the path they are travelling. According to one correspondent of *Nature*, however, the light of a small party of centipedes that he came upon produced an effect "like that of moonlight through the trees," and, coming closer, he was able to read by their illumination. I must own that I never came upon an electric or phosphorescent centipede quite as brilliant as above described. Recent experimenters have been trying to ascertain the cause of this light, and how its intensity may be increased or diminished; it is not very likely to be electrical, but perhaps it is phosphorescent. One thing is certainly clear, that these luminous centipedes have a source of light in themselves, and do not shine from having fed upon some other insect or animal that was luminous, or on some decaying vegetable substance, such being shown at times to emit light. What benefit the centipede derives from its luminous faculty we do not know; the light does not seem to be under the insect's control, though that is the case with some shining species, which withdraw and exhibit it when they please.

Should we see centipedes traversing a garden path some evening in summer—not an unusual thing—we may well spare the life of these humble crawlers, and let them shine on. In the flower garden, at least, the centipede does no harm compared to the benefits derived from its predatory habits, for it is probably rather a ravenous feeder upon the worms, young larvæ, mites, and slugs, which are its principal food. The presence of a poison-bag connected with the biting apparatus (the millipede, as previously stated, has feeble, unarmed jaws) shows that this insect is meant to kill, and in hot countries the bite of one of the large species is as much feared as that of a snake, but our small natives can do mankind no harm. It must sometimes happen that one of them is swallowed, head and all, by those hastily eating Strawberries, and stone fruit, into which centipedes manage to insinuate themselves. It is noticeable, that although fond of hiding, they seldom enter flowers, as earwigs do, but centipedes have an annoying trick of getting into the fingers of gardening gloves, also they lurk in flower pots; their advocates say their object in so doing is to prey upon the minute insect enemies of rootlets. Few people would suppose that the life of a centipede may last two years, yet such is the conclusion formed from its rate of growth.

One of the best known of the centipedes is that which Linnæus called *Scolopendra electrica*, and which in consequence got the English name of the electric centipede. It has, or appears to have, no eyes, so that it cannot see its own light; the modern name for it is *Geophilus longicornis*—referring to its fondness for earth and the length of its antennæ. It has the look of a yellowish or dirty white thread, about 2 inches long, when it is noticed gliding along the soil with a wavy motion; but its love for the ground does not prevent it from mounting walls or trees to enter Plums, Apricots, or Peaches. Some persons think it enters fruit only already attacked by insects, or that are commencing to decay. During the digging of a flower bed in spring the females have been discovered coiled round like a snake within a cell they have scooped out, and watching carefully over their batch of eggs. Probably it is in the moist weather of spring and autumn that this and other centipedes are usually luminous. Another familiar species of our gardens is *G. subterraneus*, the light of which is more frequently noticed than that of the preceding. One observer describes it as coming from the head, shining out on each side of the insect at a slight angle; another states that he perceived it to come from the joints of the

legs, which I have also noticed, and this would account for the centipedes leaving a luminous trail that may extend a couple of feet behind; it is transferred partly to the fingers should the insect be laid hold of, and fades away by degrees. Though neither of these species has a hundred legs they make a good approach to that number, hence their nimbleness. Like their relatives, the millipedes, they may be snared by slices of Potato, and in flower pots their destruction is effected by the simple application of clear lime water or a petroleum solution, strength half ounce to a gallon of water.

A much stouter centipede is that named *Cryptops hortensis*; this is also eyeless, and has long, many-jointed antennæ, by the help of which it manages to travel about the world, and to obtain its prey. In colour it is yellowish brown, and so assimilates with the ordinary garden mould; the feet are generally forty when it is adult. Its relative, the rather smaller species *Lithobius forficatus*, does possess some small eyes just behind the antennæ; this has but fifteen pairs of feet, yet it is a nimble insect, as is proved by its having been seen in the act of capturing a fly. There is a small insect, occasionally abundant in gardens, which forms a link between the centipedes and the mites, the history of which has been elucidated by Sir John Lubbock. It is semi-transparent, scarcely the twentieth of an inch in length, and mostly lives where colonies of mites are to be found. It is an eater of vegetable substances only, and starts with six legs, but ends by having eighteen. It has been named *Pauropus Huxleyi*, after an honoured naturalist, and is an active, cleanly little creature, which makes itself busy frequently amongst the heaps of leaves accumulated for mould, and no doubt is useful by helping to disintegrate these, preparing them for the gardener unknown to him.—ENTOMOLOGIST.

## AQUILEGIAS.

BEAUTIFUL alike in form and colour, elegant and striking in habit of growth, this splendid genus ranks among the most useful of flowering plants at the present time of the year. Few things are better suited for arranging in vases in a cut state; the great length of flower stem to be obtained admits of their being arranged in a light and finished style. When grown in pots they are also much prized for disposing as dot plants in groups, and for placing in vases. A few of these disposed at intervals about dwelling rooms present a marked contrast to the more compact growth of the majority of other plants employed, and thus impart an amount of lightness combined with novel colour, which is not always easy to obtain.

Even the common species familiar to almost every cottager possesses great attractions. I have seen splendid masses of them growing in the woods on the deep sandy soils of Lincolnshire, where the Lily of the Valley was also luxuriating. The flowers of the native species, however, are altogether surpassed in the matter of variety and beauty of colouring by the many fine hybrids now in commerce. Veitch's new hybrids are especially good; from a single packet of seed flowers of many peculiar and beautiful shades of colour are invariably obtained. A large bed of these coming into flower at the present time is not only exceedingly beautiful, but also possesses more than an ordinary degree of interest, as many of the opening buds reveal a succession of surprises in the beauty of their colouring.

When a mass of one variety is preferred *A. californica hybrida*, with its yellow petals and orange-red spurs, is particularly good, and well adapted for pot work. *A. cœrulea hybrida* is also good for the same purpose, the petals being pale yellow, and the spurs light blue in colour. *A. chrysantha*, with its bright yellow flowers, is a grand plant for mixed borders or for planting in the front of shrubberies; when once well established in such positions, but little attention is afterwards required.

If seeds are sown at once, any of the above species will flower next year; to do this, however, they must be well grown, as the seedlings progress slowly in their early stages, for this reason I prefer to sow the seeds in pans placed in a cool frame. The pans should be well drained, using rather light soil with which a little powdered charcoal has been mixed; with ordinary care in watering there is then no danger of the soil becoming sour. The seeds should be just covered with soil, which ought to be made rather firm on the surface. When large enough to handle the young seedlings may be pricked out 3 inches apart, on a border which has been prepared by being well forked up, and then covered with an inch of finely sifted leaf mould or old potting soil. In pricking out care must be taken not to bury the crown of each plant, or progress will be slow. Shading should be given till the plants are established, and throughout the summer watering should be regularly attended to in dry weather.

The plants should be left in this position throughout the



winter, and in February or March, according to the state of the weather, be planted in their permanent positions; if in beds 9 inches apart, when in borders in clumps of five, or dotted irregularly to form single specimens. Any plants which are unduly weak should be lifted and replanted 6 inches asunder in nursery beds, and have the flower stems removed should any form. With this treatment fine plants are produced for the following season. These I find especially useful for flowering in pots. They should be potted in October, using a compost of two parts loam to one of well decayed manure, with a little sharp sand and wood ashes added. Pot firmly, winter in cold pits, and when the flower stems appear give liquid manure freely. When the plants require more head room than a pit affords, transfer to a cool greenhouse or conservatory, when they will quickly develop into beautiful objects, suitable for all kinds of floral embellishment.—W. H.

### FRUIT PROSPECTS—INSECTS.

THE fruit crops here are very promising without exception. Apples, Pears, Plums, Peaches, Nectarines, bush fruits, and Strawberries are well furnished with even crops. Strawberries must necessarily be small in berry, consequent on the long spell of dry weather, and no doubt all bush fruits will be undersized from the same cause. Raspberries in particular seem to have shown signs of distress in a marked manner.

Pears, both on walls and in the open, are above the average, and but very few trees are without fruits. These and Plums on walls were protected with fish nets while in bloom, and the weather being so dry frosts did but little or no apparent injury. Much thinning must be done to obtain full grown crops. Cherries of the dessert and Morello kinds are equally fruitful, but the dry weather thinned them somewhat, yet there are plenty left to mature. We can boast of but one Fig tree on the open walls, but this has many fruits of good size swelling freely, and had no protection in winter. The Gooseberry caterpillar made an early start on the bushes, and the colonies although attacked while very few in numbers showed great determination, but have disappeared since the cuckoo paid us a few visits in the early morning and late evenings. Of Peaches but few are grown outdoors, and the same apply to Apricots; but the trees we have are carrying a good crop of early fruits. Plums require considerable thinning.

On the gravelly subsoils the drought has told its tale. This I had ample witness of at Draycot, Chippenham, where trees of all kinds seemed to be suffering, and the crops in most instances were light as regards stone fruits, Apples, and Pears. Gooseberries, Raspberries, Red and Black Currants, and Strawberries looked well. Water is carted in large quantities, but without a heavy mulch and regular supplies Mr. Gibson finds but little benefit derived from such labour when the ground is so hot and dry as it was previous to the much-needed rains.

In Captain Spieer's gardens, Spye Park, there are, with few exceptions, fair crops, Red Currants being perhaps the lightest crop. This is attributed to frosts, which from the somewhat low lying situation of the garden often prove disastrous in spring. Plums on the walls are wonderfully even, and the trees in the best possible condition. Peaches and Apricots, too, are in a similarly fertile state, and very free from insects. Pears on walls are variable, some carrying a full crop, others being practically bare. Jargonelle and Williams' Bon Chrétien were both furnished splendidly; it is seldom that the first-named is seen so well set. Healthy young pyramid Plums and Pears planted by Mr. Perry only a few years since are almost devoid of a crop from the action of the spring frosts. However, there is an abundant promise, and with the unlimited resources in stable manure for mulching, dry weather has not the same influence that is known in too many gardens this spring.

Insects abound more or less everywhere, the fly on Plums and Cherries, and the caterpillars on Apples, Pears, and Gooseberries are only too common, but it is hoped the showery weather now set in will tend to mend matters somewhat. Black fly on Morello Cherries must have attention or the crop will quickly deteriorate, and I have found hellebore tea more effectual than any other dressing in making a clearance of this destructive pest.—W. STRUGNELL, *Rood Ashton Gardens, Trowbridge.*

IN "Notes and Gleanings" (page 375) you give the Board of Agriculture's advice in regard to some of these. There is no doubt that the amount of small caterpillar life is largely in excess of the ordinary quantity. For that, I apprehend, this extraordinary drought is responsible in large degree. The small moths, parents of many of these pests, are easily killed by a time of heavy rain—a large drop of rain hitting one of these tiny moths is nearly certain to put an end to its existence, or at any rate to incapacitate it from the roaming life which these little creatures evidently adopt—dropping one egg here and another yonder. I have little doubt that if these various applications reach the grubs, death results. But does it reach them? that is the question. I trow not! Most of those that injure our fruit trees belong to the leaf-rolling or leaf-closing tribe. Does this application ever reach them? I cannot think that one in a hundred is touched by them. Then as to aphides. These on Peach trees do not appear to me to take the stem; on the contrary, they are under the leaves, and these under the influence of the

punctures of these little pests twist about in various ways; but the result is generally that the curling leaf protects its enemy, and they are not seen even unless the leaf be unfurled. I wonder if the Board of Agriculture have tried the effect of their solutions on these. I have tried hard syringing on Peach trees against a wall, and the aphides remain lively and apparently none the worse. If the branches are loose and long enough that they can be dipped into a eup or basin containing the solution and stirred about in it, the pests may be reached, but this is not often the case; they seem to attack the short branches, with five or six leaves all close together and no length of stem, and the unhealthy appearance of these is the only clue to their existence.

As regards the maggots of the leaf-rolling kind, they are safe from the application, for even if put into a basin containing the solution I do not think it would reach the householder; and if it did, he probably would wriggle out the other side, and, dropping by his silken thread, alight on a neighbouring branch. If two leaves are glued together they safely enclose the grub, and if he has a sleeve he laughs in it at all the solutions. So again if the egg is laid, as is often the case, in the petals of the blooms, these are glued together, or three or four of the small fruit are thus fastened together, and the grub is safely protected there—the various fruits that go together to make the walls being all more or less injured. In fact, these fruits if spared can never be other than deformed specimens. My thoughts are directed not to orchards but to our wall fruit trees in gardens. I contend that the only safe plan is to cut off the leaf and burn it. Hand-picking is the only real safety, whilst in a year like the present, when Pears have set, as in some places, ten or more in a bunch, these should be separated and reduced to two, or perhaps only a single fruit. All these leaves and injured fruit must be burnt. Much may be done by squeezing the curled up leaves, but they do not improve the appearance of the tree. With most now the caterpillar has become a chrysalis, and if not stopped the young moth will soon be out again, and a fresh brood result. I venture to state that those who trust to these solutions are pinning their faith to broken reeds, and will be disappointed. Hand-picking may be tedious, but it is sure.—Y. B. A. Z.

### LATE DECORATIVE TULIPS.

BEFORE the Tulip season is quite ended I cannot refrain from calling attention to the wealth of beauty to be found in these flowers. Early flowering sorts are perfectly well known, though too often only as forcing plants, but the May blooming kinds are not represented in many gardens.

Some varieties which I bought many years ago as "breeders" or "mother" Tulips, and which hold something of the same position to florist Tulips that our beautiful self Carnations do to show varieties, seeing not one of them has ever changed in character, have yielded annually many gatherings of flowers as useful as they are beautiful. The stems of some of these are quite 3 feet long, while the colours of the flowers are indescribable, ranging as they do from fawn, soft blush, pink, crimson and violet, to deepest purple. One of the finest of all yellow flowers is a breeder named Bouton d'Or. There is another pretty variety called Picotee, but of the section to which this belongs I am not so sure, as the shape of the bloom is somewhat different. At any rate, it is indispensable, and is found in trade catalogues. In addition to these a number of T. Gesneriana, and of the more ruddy Oculus Solis, are indispensable. T. sylvestris we have in numbers in the woods, but it well repays cultivation. The form of the flower as well as the soft shade of yellow, and its delicious scent render it indispensable. Retroflexa is another yellow species of much beauty.

I once purchased some bizarres at a few shillings per 100, and no flowers have given more satisfaction than these. The ground colour is yellow marked with scarlet, maroon, and other shades. The description may appear rather glaring, but the flowers really are not so, they are brilliant and glowing, but without any hint of vulgarity in tone.

I am rather fond of monotone in arrangements of flowers. It is a simple and harmonious method, and there is no danger of mistaken contrasts. With Tulips, however, all colours may safely be employed together—purples, violets, yellows, reds and whites, and the effect is always good, just as it is if one shade or one colour alone is used. Tulips also harmonise well with other flowers, a few long-stemmed flowers giving character to an otherwise tame arrangement.

The time of day to cut Tulips is in the early morning, and the flowers should always be young. Placed with the stems in water for a few hours previous to packing they carry in perfect condition, and no flowers last longer in a cut state at this season of the year than they do.

I have seen it stated that Tulips succeed without cultivation, but that is not so. Some of the kinds which do not increase much succeed fairly well for years left in the same position, but as a rule the bulbs will be found to produce better flowers if they are occasionally lifted and planted in fresh soil. Sorts which, like T. Gesneriana, increase rapidly may be taken up every summer with advantage, and allowed more room. They do not require much space when grown in this way. If in rows put these at a foot asunder, and about five bulbs to the foot in each row. I find a surface dressing of superphosphate of lime applied early in spring has a most beneficial effect on the plants, the foliage comes stronger, the flower stems longer, and the flowers themselves of a greater size. The plants succeed in any position. I have some on a south, others on a north border. Many are grown in mixed borders, and the largest number in a quarter of Gooseberries.



While recommending these late-flowering Tulips I by no means wish it to be understood that the early blooming section should be ignored. I grow a large number of these; indeed, all the pot-grown bulbs are planted out, and in a short period these produce some useful flowers, although they are not quite so valuable as the others. Nor have I forgotten the quaint and richly marked Parrot Tulips; but of these I have grown comparatively few. At the same time these are proving so valuable that I hope to increase my stock for another season. Those who are totally unacquainted with Parrot Tulips may assure themselves that they are worth cultivating. The flowers are very large, and whether unexpanded or when fully developed they are equally beautiful.—B.

### GLADIOLUS COLVILLI THE BRIDE.

SOME two or three dozen pots of these extremely useful and chaste flowering plants are to be seen in the gardens at Draycot, Chippenham, where these, as well as Freesias, are always well grown. They are unusually strong and well flowered, and so sturdy are the plants that no supports are required to keep their handsome spikes, now open, erect. For house decoration in a cut state, or as pot plants, these are choice and beautiful. They are grown in turfy soil, leaf mould, and some decayed manure, and when growing freely get the benefit of weak doses of liquid manure often.

The secret of flowering these well is to thoroughly ripen the bulbs after their growth is completed, not by suddenly withholding water, causing the foliage to die away prematurely, but by standing the pots on a sunny shelf, and attend to them with their daily needs until signs of natural decay in the foliage are clearly apparent, when water can be withheld altogether. This is the treatment given by Mr. Gibson, and the results are satisfactory.

I find they will not bear much exposure to sharp frost in pots without injury; a portion of our stock plunged in ashes in a cold pit last winter were so crippled that they did not recover but few of them, and those that did do so are not strong enough to flower. Another gardener writing on the subject expressed his regret at the loss of several hundreds of his bulbs from the same cause. In the future, therefore, greater protection will be afforded these valuable Easter and Whitsuntide flowers, to avert such a serious loss which is now felt by their absence among the current season's display.

The plants at Draycot are growing in 6-inch pots, each containing seven bulbs, which, well grown, is sufficient to present a perfect individual specimen suitable for vases in the house, as dot plants in mixed conservatory arrangements, or any other use for which flowering plants are eligible. The bulbs in potting should be selected, keeping the stronger ones separate from small ones, or an evenness of flower spikes will not be secured.—W. S.

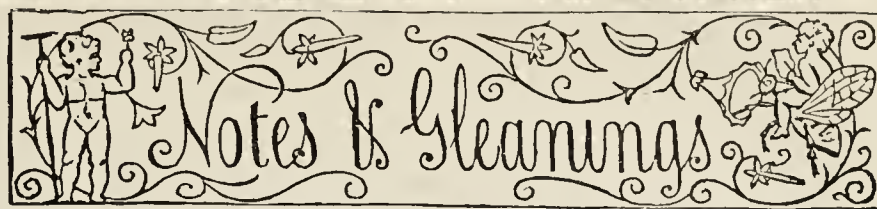
### LARCH DISEASE.

I WAS very pleased to read Mr. Molyneux's practical letter respecting the above in your issue of May 11th, answering my inquiry as to whether the disease is on the increase or decrease in the country generally. It evidently is not on the decrease in the district where Mr. Molyneux resides, but is as bad, or worse, than here. His account of it was all the more interesting to me as being from a district so entirely opposite to this both as to climate and composition of soil. Whilst the Swanmore soil there is heavy, and the subsoil chalk, ours is light loam in some places, sandy upon a subsoil of gravel or slaty rock. There is neither lime nor chalk in the soil, as is evidenced by the fact of Rhododendrons and other American plants flourishing very luxuriantly. We have moved some hundreds of bushes of all sizes, from 1 up to 12 feet in height of recent years, and all have done well, in fact they grow almost anywhere here.

Our Larch plantations are mainly on hillsides, and in most cases naturally well drained, and facing almost every aspect, but, like Mr. Molyneux, we have noticed that where the plantations are on a north aspect the trees have escaped the disease much better than elsewhere. This favours the theory that late spring frosts of the last few years have a great deal to do with the spread of the disease, as those on a warm position start into growth early, and are cut back, are the first to be attacked by the disease, whilst those facing north start much later, and are not attacked so badly.

The Larch aphid, or Chermes Laricis, is to be found in places with us, but not in such numbers as to do much damage. Our chief enemy is the canker. It has attacked trees of all ages, from three years up to twelve. We cut out about 12,000 diseased trees four years old from one plantation this spring. It is only about four years since the disease was first noticed here, but in that time it has made rapid progress.

The Spruce and Pines grow well here, and attain good dimensions; but they cannot take the place of the Larch as a timber tree, there being a great difference in their value. Abies Douglassi, which Mr. Molyneux says will not grow at all with him, thrives well here where we have planted it; but we have not planted it extensively, nor in exposed positions. I am afraid it will only do in sheltered positions. I should like to hear the experience of others who have tried it more extensively, also its value as a timber tree in comparison with the Larch.—R. C. WILLIAMS, *Crosswood Park, Aberystwith.*



EVENTS OF THE WEEK.—Apart from the Temple Show, which opens to-day (Thursday) under the auspices of the Royal Horticultural Society, and continues on Friday, but few events of special horticultural interest will take place during the ensuing week. The Gardening and Forestry Exhibition at Earl's Court, of course, is now open, and the customary auction sales at the various rooms will take place.

— THE WEATHER IN LONDON.—The current week opened with bright and sunny weather in the metropolis. Monday was also a glorious day, and the same may be said of Tuesday with the exception of the evening, when a slight shower fell. Wednesday morning was likewise fine, and as we are going to press the weather appears settled.

— WEATHER IN THE NORTH.—Abundance of rain has fallen during the last week, and the weather continues unsettled. A great deal of thunder has accompanied a half-hour's storm, on the evening of Saturday being very severe. The 22nd was a remarkably fine day throughout. The temperature has been high for the season, only on one night falling under 45°.—B. D., *S. Perthshire.*

— FLORENCE NARCISSUS.—I have had some bulbs of a Narcissus sent me. They have been cultivated near Florence, and are said to be the sort painted by the Italian masters of the fourteenth century. Can anyone oblige with name, saying if hardy? They somewhat resemble small Tazetta bulbs.—B.

— HEMEROCALLIS FLAVA.—Large patches of this fine old herbaceous plant are now in full beauty, the stately habit and bright yellow flowers making it one of the most attractive of hardy plants. Unfortunately the flowers do not last long, but either on the plants or cut and arranged loosely with foliage in vases they are very beautiful.—H. RICHARDS.

— OPENING OF A PUBLIC PARK AT ST. HELENS, LANCASHIRE.—On Thursday, May 18th, Taylor Park was formally opened by the Mayor, A. Sinclair, Esq., J.P., who received the deed of gift from the donor, S. Taylor, Esq., B.L. The park comprises 36 acres of land and 11 acres of water. Mr. Thomas Smeatham, late of Leaton Knolls, Shrewsbury, received the appointment of head gardener.

— POTATOES IN IRELAND.—According to an Irish paper there has seldom been a more hopeful promise of a rich yield in all descriptions of crops than at present. The Potato sets were put in during fine dry weather, which is of the greatest advantage, and all were planted in excellent time. New Potatoes were dug some weeks ago in Glandore, and they are at present comparatively common.

— SHOWER AND VICTORIA BOUQUETS.—I shall deem it a favour if information can be given on making the above bouquets. I have been a subscriber to the *Journal of Horticulture* for several years, and though, as you probably know, our winter occurs when it is summer in the old country, yet I have gained much useful knowledge from perusing your pages.—W. S. TANDY, *Fairview, near Pietermaritzburg, Natal.* [We will readily publish the desired information if any of our bouquet-making readers will favour by supplying it.]

— GARDENING APPOINTMENTS.—Mr. J. Wright, late gardener to A. Sarle, Esq., Green Hayes, Banstead, has been appointed gardener to H. O. Wills, Esq., Kelston Knoll, Bath. Mr. James Jones, after sixteen years as under gardener at The Larches, Preston, has been appointed head gardener to R. Fenton, Esq., Dutton Manor, near Longridge, Lancashire. Mr. Albert Pearce, for over two years foreman at Temple House, Great Marlow, Bucks, has been appointed head gardener to H. C. Jobson, Esq., Summer Hill House, Kidderminster.

— ARNICA MONTANA.—I quite agree with your note as to the beauty of this plant, but can anyone tell me if it requires any special treatment? I purchased a plant last summer which grew very slowly, and eventually died down in the autumn. It came up again in a very weak state this spring, and has now apparently collapsed altogether. This may be owing to the exceptionally dry season. Has any of your readers even seen a thoroughly vigorous plant of it, and under what conditions was it growing?—W. H. DIVERS, *Ketton Hall Gardens, Stamford.*



— THE GARDENERS' COMPANY were kindly invited by Sir Trevor Lawrence, Bart., the Master, and Lady Lawrence, to an "At Home," at their town residence, 57, Prince's Gate, on Saturday last.

— MONTPELLIER BOTANIC GARDEN.—The tercentenary of the foundation of this garden is being celebrated by a series of fêtes, which commenced on the 20th, and will be continued to the 28th inst.

— EAST ANGLIAN HORTICULTURAL CLUB BENEVOLENT FUND.—The Hon. Treasurer has received £22 15s., the profits arising from an amateur dramatic performance given by Messrs. Daniels Bros.' employés on 13th April, at Norwich.

— HERBACEOUS CALCEOLARIAS.—We are informed that at the Cheltenham Show recently Messrs. Sutton & Sons were adjudged a medal for a collection of Calceolarias, the only medal ever awarded by the Society.

— AGRICULTURAL AND HORTICULTURAL IMPORTS.—In the House of Lords recently the Earl of Kimberley moved, "That a Select Committee be appointed to consider and report whether legislation for the purpose of requiring the foreign or colonial origin of imported agricultural and horticultural produce, to be marked thereon or otherwise indicated, is necessary, expedient, and feasible; and, if so, what are the provisions which such legislation should comprise." The motion was agreed to.

— THE TEMPLE SHOW.—As notified in another paragraph, the great Flower Show held under the auspices of the Royal Horticultural Society opens in the Temple Gardens to-day (Thursday). A preliminary visit as these pages are passing through the press affords evidence that the Show in many respects equals those held on previous occasions. This year Orchids, as they hitherto have done, form a feature in the Exhibition. One large marquée is filled with Orchids, and some are staged in another huge tent with various exhibits. The Orchids are contributed by many of the leading growers, including Baron Schröder, Sir Trevor Lawrence, Bart., C. J. Lucas, Esq., Messrs. F. Sander & Co., Hugh Low & Co., J. Cypher & Sons, and B. S. Williams and Son. Ferns are extensively shown by Messrs. W. & J. Birkenhead, and hardy herbaceous flowers make a striking display, these coming from Messrs. P. Barr & Sons, T. S. Ware, Collins Bros., and others. Gloxinias are well represented, some grand collections being staged by Messrs. Sutton & Sons, J. Carter & Co., and J. Veitch & Sons, the latter firm also having hybrid Streptocarpus. Begonias are displayed by Messrs. J. Laing & Sons, H. Cannell & Sons, and T. S. Ware. Roses are not extensively shown this year. A detailed report will be given in our next issue.

— SUTTON'S IMPERIAL CABBAGE.—This is quite distinct from the well-known Wheeler's Imperial, so popular as a spring variety. We have a bed of several hundreds of each of these Imperial Cabbages, and the difference between them is very marked. Wheeler's is much the smaller and quicker in turning in, but the larger growing and later kind has its value, and a very considerable one too, in supplying a succession of heads of delicate colour, flavour, and crispness. It is not wise to depend on any one variety alone. A light sprinkling of nitrate of soda put on some time since and hoed in has had a marked effect, although not a drop of rain have we had since its application. Even in ground of good heart a sprinkling of this quick-acting fertiliser is a good investment, especially in a season like the present, in which the growth of most vegetables is slow.—W. STRUGNELL.

— CARNATION SOCIETY FOR WESTERN ENGLAND.—It has been thought by several growers and lovers of Carnations and Picotees in Western England that a good opening exists for the formation of a Society for the purpose of increasing the cultivation of these beautiful flowers in this part of the country. At the present time there is no show of Carnations held nearer than London, and it is thought that if annual shows, such as the Oxford and Midland Counties Shows, can be arranged for in the west, they would be appreciated by numerous small growers who do not care to go to the expense and inconvenience of sending to more distant shows, but would be glad to exhibit, if they could do so within a reasonable distance. Many of the large growers would doubtless exhibit, and those interested in the Carnation would be brought together and have the benefit of an interchange both of ideas and experience in regard to this subject. Mr. F. W. Baker of Keynsham, says *The Western Press*, is acting as Hon. Secretary of the movement, and Mr. J. A. Taylor of Warmley Hall is also interesting himself in its behalf.

— BOTANICAL LECTURES AT CHELSEA.—Mr. J. G. Baker, F.R.S., has commenced a course of botanical lectures and demonstrations in the gardens of the Society of Apothecaries, Chelsea. The lectures are given on Saturday afternoons at three o'clock, and are free.

— DISEASES OF PLANTS.—Italy is to the fore in the economic investigation of the diseases of plants, this work being carried on at two stations. One of the stations is at Pavia, established in 1871, and under the charge of Professor Brioni; and the other, established in 1887, is under the directorship of Professor Cuboni.

— ROYALTY AT FAREHAM.—Their Royal Highnesses the Duke and Duchess of Connaught honoured Messrs. W. & G. Drover with a visit to their nurseries, Fareham, on Friday last. Their Royal Highnesses were received by Mr. W. Drover, and conducted through the houses. The Duchess evinced great interest in the growth of the Stephanotis, Gardenias, and Roses, and on leaving Her Royal Highness was presented by Mr. W. Drover with a bouquet of Perle des Jardins Roses and His Royal Highness with their new book on the "Growth of the Chrysanthemum."

— WHIT-MONDAY IN LONDON.—The weather in London last Monday was all that could be desired for a Bank Holiday. Nearly 70,000 people went to Hampstead Heath, 53,000 to the Crystal Palace, about 90,000 to Kew Gardens, 40,000 to Dulwich Park, 112,000 to Battersea Park, over 27,000 to the Zoological Gardens, 17,000 to the Tower, and 14,293 to the South Kensington Museum. In addition to these there were immense crowds at the Gardening and Forestry Exhibition. Thousands of people also visited Hampton Court Park, which was thrown open to the public without any formal ceremony.

— DESTROYING CRICKETS.—Being much pestered with crickets in our vinery, I shall be greatly obliged if any readers of the *Journal of Horticulture* will let me know of a better plan than I have tried—viz., beetle traps baited with sugar and treacle—for eradicating the pest. I should also like to ask if it is not very unusual for a cluster of Grapes to show from the extreme point of a shoot? There are only a few leaves on the shoot beneath the cluster, not one over it. I have left it from curiosity. The variety is Alicante, and the bunch should weigh about 4 lbs. if fully grown.—W. L. W.

— POLLINATION OF TOMATOES.—Anything from the pen of Mr. Iggulden is always acceptable, and I read with great interest his article on the "Pollination of Tomato Flowers" (page 350, May 4th). It may interest him and others to know that after perusing his article I was sufficiently interested to make a microscopic examination with a high power lens of the stigmas of two Tomato flowers—the one pollinated in the ordinary way by shaking the flowers, and the other in the way suggested by Mr. Iggulden. Both were well pollinated, and, so far as I could judge, there was no appreciable difference in the quantity of pollen deposited on the stigma.—CONSTANT READER.

— FLOWERS ARRANGED IN THE FRENCH STYLE.—There is no doubt that we have to concede a good deal to our neighbours over the Channel in matters of taste. Our solid insular perception refuses to lend itself to the vagaries of fashion and confectionery which are taken up and negotiated so airily by our charming and volatile friends. But if there is one of the lighter arts in which the French more excel than another it is in the arrangement of flowers. The solidified nosegays which we are accustomed to see in shop windows at home would be impossible to the most untaught *marchand des fleurs* abroad, and I, writes a correspondent in "Talk," am truly glad to see that an offshoot of this native talent has lately taken root in Regent Street, and bids fair to flourish there like the proverbial green Bay tree.

— THE WEATHER IN WARWICKSHIRE.—Writing from Warwick "H. D." says:—"The long wished for rain has come at last, and with no unstinted hand as far as this district is concerned. A steady rain of several hours' duration fell during the afternoon of Monday 15th inst., and continued at intervals during the night, amounting in all to half an inch. A few slight showers fell during the succeeding night. To-day, Wednesday, 17th, between twelve and two o'clock, we experienced a perfect deluge of rain. In a little over an hour the fall amounted to 1½ inch, and a series of steady showers continued throughout the afternoon and evening. Vegetation on every hand is responding with marvellous rapidity to the beneficial influence of life-giving rain, which has revived the drooping hopes of many a farmer and gardener, and converted trees, crops, grass, and flowers from a parched and weakened condition to one of the freshest vigour, not without high promise for future plenty."



—FRUIT AS FOOD.—Now that the fresh fruit season is at hand, will you allow me to announce that all your readers wishing to study the subject of a fruit diet, and how to adopt it, can obtain a packet of literature by addressing a postal wrapper to the "Natural Food Society," 78, Elm Park Road, S.W.? I ask this favour on the grounds of health and temperance, as well as because by the more profitable occupation of the soil for fruit, is become a question second to none in its bearing upon the solution of the social problem. Fruit, besides, contains elements of nourishment, contains also enough liquid to make drinking needless. After three years' personal trial, I can only add, "The proof of the pudding is in the eating."—W. S. MANNING.

—EARLY PEAS.—Our first pods of Sutton's Ringleader Peas were gathered on the 20th inst. from a sowing made on a south border February 25th, being exactly twelve weeks. They have not grown to more than half their usual height for want of root moisture, and the crop will consequently be a very short one. Sutton's Early Champion sown on the same date is only a few days later. American Wonder sown about the same time and forwarded under glass in boxes were ready a few days before Ringleader, but the quantity obtained scarcely repaid the trouble taken with them. No rain fell from the time of their being planted till they were ready for gathering. Unless Peas were sown at short intervals the supply cannot be easily maintained where demands are heavy.—W. STRUGNELL.

—ELECTRICITY IN POTATO CULTURE.—In order to test the conclusions of M. Spechnew, a French horticulturist, M. E. Lagrange, has cultivated Potatoes in a field divided into three parts, all of the same soil and exposure. One section was cultivated after the manner of Spechnew, the Potatoes being planted between plates of zinc and copper connected above the soil by wires so as to form earth batteries, with a current through the ground where the Potatoes were growing. The second section was cultivated in the ordinary way, without electricity. The third section was provided with small lightning rods thrust into the soil between the Potatoes until their ends were on a level with the tubers. The yield of the third section was much better than that of the other two sections, and was obtained fifteen days sooner. The ratio of the crops in the different sections were as 78, 80, and 103. The first section, although poor in roots, gave an exceptionally vigorous foliage.—(*Mark Lane Express*.)

—HORTICULTURE IN THE NORTH.—From a horticultural point of view the spring of 1893 is phenomenal, and the prospects for agriculturalists and horticulturists are very encouraging, observed a northern daily contemporary recently. The land in Northumberland and Durham is looking remarkably well, and the farmers are all in good spirits. Grass and seeds are in a wonderfully forward condition, and, given rain in the present month, the opening agricultural year augurs a rich autumnal ingathering. On the 6th inst. outdoor-grown Cornwall Strawberries were sold in the Newcastle Green Market five or six weeks earlier than previous "early" years. Last year it was about a month or so later that new fruit appeared in Newcastle, but a fortnight ago Gooseberries were sold at the rate of 4s. per stone, while Jersey Potatoes were disposed of as low as 21s. per cwt.—6s. or 7s. lower than the price at which they started last year. As an indication of the extremely forward state of fruit, it may be mentioned that Strawberries did not arrive in the Newcastle markets last year till June 18th.

—FRUIT TREES ON RAILWAY EMBANKMENTS.—Many French horticultural societies have petitioned the Government during recent years to substitute fruit for forest trees in the plantations made along railway routes. To these petitions, remarks the "Garden and Forest," the Ministry of Public Works has now replied by saying that, some twelve years ago it recommended the employment of fruit trees for the purpose named, that extensive experiments had since been made, and that these experiments had shown the inferiority of fruit trees to forest trees. Either the fruit trees had not flourished, or they had been pillaged and mutilated by marauders; and, moreover, they cast too heavy a shade, thus causing dampness and deterioration in road-beds near which they stood. "It is needful," says the explanatory circular, "that trees planted along tracks shall be capable of developing in isolation into tall slender forms, so that excessive shade may be avoided, and this requirement is best fulfilled by forest trees. Therefore the administration has renounced the attempt to popularise the plantation of fruit trees except in one or two departments, where a single species of nut-bearing trees will henceforth be admissible." In Belgium the case is about the same, and, indeed a Member of Parliament remarked, when the question was recently under discussion, that the only "trees" which should be planted along railway tracks were telegraph poles.

—AN EDELWEISS FARM.—A German horticultural paper calls the attention of tourists to the fact that they may be grievously deceived in thinking that the objects which they buy in Switzerland, decorated with dried blossoms of the Edelweiss, are really mementoes of the Alps. An enterprising horticulturist near Dantiz, on the northern coast of Germany, has, the "Garden and Forest" understands, established an Edelweiss farm, whence, last year, considerable quantities of the flowers were sent to a tradesman on the other side of the Alps, while this year the amount thus exported will be twice as large. The seeds are sown in tepid fertilised beds at the end of March or beginning of April, and are transplanted once before they are set out in the fields in July, after which it is only needful to weed the ground and loosen the soil around the plants.

—POPULAR NAMES FOR PLANTS.—Good illustrations of the difficulty of determining plants or vegetable productions by popular or local names are given in a letter by Mr. B. B. Smyth, of the Kansas Academy of Science, published in the current Quarterly Record of the Royal Botanic Society of London. "The name Nightshade," he says, "is applied here to *Solanum nigrum* and *S. triflorum*; the name Woody Nightshade is applied to *S. Dulcamara*; the name Bittersweet is applied to *Celastrus scandens*, a twining woody plant with clusters of showy scarlet berries; the name Laurel is applied to the different species of *Kalmia*; the names Mock Orange and Syringa are applied (of course misapplied) to *Philadelphus*; the name Sarsaparilla is (mis)applied to *Aralia*; the name Snakeroot is applied to a dozen different species in half as many different orders; the name Mouse-ear is applied to *Gnaphalium*, *Antennaria*, and *Cerastium*."

—THE FRUIT AND VEGETABLE MARKET AT BRENTFORD.—The new market, which has been laid out by the Brentford Local Board, was opened by the Lord Mayor of London on Wednesday, the 24th inst. The venture has been undertaken in consequence of the large proportions assumed by the market in the public thoroughfare near Kew Bridge, and the Board have received such support, not only from large growers in Middlesex and Surrey, but also from London salesmen and representatives of the northern English markets, that they regard success assured. It is intended for the wholesale and retail sale of market garden produce, flowers, and fruit, hay, straw, and general fodder. The whole of the stalls, it is stated, have been taken, and more than half the open stands have been allotted. Vegetables, fruit, and flowers will be on sale on Mondays, Wednesdays, and Fridays from four o'clock in the morning in summer and five o'clock in the winter.

—CLIANTHUS PUNICEUS.—What more interesting plant for training under the rafters of any ordinary greenhouse could be found than *Clianthus puniceus*, or, as it is commonly called, the "Parrot's Bill?" Introduced from New Zealand in 1832 this plant has had to give way in a great measure to the other species *Clianthus Dampieri* or "Glory Pea." The latter, although very beautiful, is not always easily cultivated, and to those who would perhaps like something less fastidious *C. puniceus* is worthy of being tried. Cuttings inserted in sandy soil in small pots and placed in a little bottom heat will soon root, and should be transferred to small pots, using a compost of good loam, leaf mould, charcoal, or red sandstone, and silver sand. After potting keep rather close, and use the syringe freely when the plants have become established in the new compost. When the small pots are filled with roots repot or plant out. In either case sufficient root room and good drainage should be given, and the syringe freely used. A little shortening back in the early season of the year is all the pruning it requires. A handsome plant, which covered the greater portion of the rafters of a span-roofed plant house, was recently in full flower at Walton Lea, Warrington, the residence of John Crosfield, Esq.—R. P. R.

—TRANSFERENCE OF MATERIAL IN PLANTS.—From recent researches on transference of material in plants (represented—*e.g.*, by transference of starch in the Potato), Herr Brasse is led to present the following view of what goes on. The assimilation of carbon in the sun's rays is manifested directly in deposition of starch in the chlorophyll grains. Through action of diastase in the leaves, and at a temperature lower than that of its formation, this starch is changed into reducing sugar, which spreads by diffusion from its place of formation into all the tissues of the plant. In certain parts, and especially in the tubers, the sugar is continuously transformed. The tubers, with regard to dissociation, act like the cold wall in vaporisation of a volatile liquid in an enclosed space. The sugar-content of all cells of the plant seeks to enter into equilibrium with that of the cells of the tubers, in which the content is less, because a change of sugar into starch takes place, and the co-efficient of this change is here less than that of the converse



change in the leaf, the temperature of the tuber being less. Owing to this inequality, there is a transference of starch from the leaf into the tuber, in which it passes through the intermediate stage of sugar. In a similar way Herr Brasse would explain the transference of nitrogenous and mineral plant materials, and their storage in special organs.—(*Comptes Rendus de la Société de Biologie.*)

— ROYAL METEOROLOGICAL SOCIETY.—The monthly meeting of this Society was held on Wednesday evening, the 17th inst., at the Institution of Civil Engineers, 25, Great George Street, Westminster, Dr. C. Theodore Williams, President, in the chair. Dr. H. R. Mill was elected a Fellow of the Society. The following papers were read:—1, "Mean Daily Maximum and Minimum Temperature at the Royal Observatory, Greenwich, on the Average of the Fifty Years from 1841 to 1890," by Mr. W. Ellis, F.R.A.S., F.R.Met.Soc. The author gives tables of the mean maximum and mean minimum temperature of the air on each day of the year, and also tables showing the daily range of temperature and the mean of the daily maximum and minimum values. 2, "Suggestions, from a Practical Point of View, for a New Classification of Cloud Forms," by Mr. F. Gaster, F.R.Met.Soc. The forms assumed by clouds at different levels, and under various conditions, have recently received considerable attention from meteorologists. The author, however, does not approve of the nomenclatures and classifications which have been proposed, as, in his opinion, they appear to be little, if any, better than the older ones they were intended to replace. He now proposes a somewhat different classification, arranging the clouds according to altitude under the following headings:—(1) Surface Clouds, or those which appear commonly between the earth's surface and a level of about 2000 feet; (2) Lower Medium Clouds, including all varieties which usually float at an elevation ranging from 2000 to about 10,000 feet; (3) Higher Medium Clouds, or those commonly found at altitudes varying from 10,000 to about 22,000 feet; (4) Highest (or Cirriform) Level Clouds, or those at elevations exceeding 22,000 feet. The author gives the names of each variety of cloud included in the classification, together with an account of the principal characteristics of each as far as appearance goes. 3, "Notes on Winter," by Mr. A. B. MacDowall, M.A., F.R.Met.Soc. In this paper the author discusses the question of periodicity in winters at Greenwich and Paris, and the relation of summers to winters.

— FLOWERING SHRUBS AT LAMPORT HALL.—On perusing some old numbers of the *Journal of Horticulture* one was found bearing date 20th June, 1872, giving an account of the Isham family, their family residence, and the Lamport estate and beautiful gardens. One sentence may be quoted, which is even of greater force now than when originally written—viz, "On the side of the park skirting the Northampton Road, Sir Charles Isham has indulged his love of trees and shrubs by planting it most profusely with scarlet and double pink Hawthorns, and other beautiful flowering trees and shrubs, to the great adornment of his policies and estate, and the delectation of the wayfarer, who cannot but be charmed with the beauties that thus cheer him on his weary way." At the present day this description is quite correct as far as it goes; but it is far short of the real state of things. For a distance of at least a mile and a half along the turnpike road towards the town of Northampton the red and double pink, interspersed with the white-flowering Thorn hushes, adorn the road. Just now these Hawthorns are beautiful, making the road peculiarly cheering to the wayfarer by their brightness and colour. It is no uncommon circumstance for people to drive from Northampton eight or nine miles at this season for the purpose of having a sight of the red and pink May, and to admire the beauties of the flowering trees and shrubs, which most certainly add grace and loveliness to the plantations by the roadside. Sir Charles Isham may be congratulated on his taste and the success of his attempts in thus beautifying his estate, to say nothing of the pleasure and gratification he affords to the community at large, for everyone who sees Lamport at this period of the year admires its beauty and expresses his pleasure with its charms. In this way Sir Charles is no doubt compensated for his pains and his outlay, which must have been considerable. Long may he live to enjoy the results of his labour and care.—GEORGE MACKINLAY.

#### DRACÆNA SANDERIANA VERSUS D. THALIOIDES.

"WHEN doctors differ who shall decide?" In Mr. Linden's note on the plants exhibited by him and Mr. Sander at the last meeting of the Royal Horticultural Society he says, "It is certain that the name under which I have shown this plant is correct," his authority being the Berlin Botanic Garden. Against this assertion we must place the

decision of Mr. Baker of Kew, not to mention others who have looked into the matter, which is to the effect that whatever the plant is that has been named *D. Sanderiana*, it certainly is not *D. thalioides* of Morren, nor does it agree with any other species of *Dracæna* described. In the herbarium at Kew there are good specimens of typical *D. thalioides*, and there is also a good representative living plant, which flowered in January this year, in one of the stoves.

This species may briefly be described as an erect woody stemmed plant a yard high, with leaves nearly 2½ feet long, the lower portion narrowed into a distinct petiole a foot long, the upper portion a flat lanceolate blade 2½ inches wide, gradually narrowing to an acute point. This agrees exactly with the plant figured by Morren as *D. thalioides*, and described by Brongniart as *D. Aubryana*. It appears to have been introduced and distributed under the former of these two names by Messrs. J. Makoy & Co., of Liege, before Brongniart described it in 1860. All this is, however, beside the point. It is quite clear that the Berlin authorities were in error in applying the name of *D. thalioides* to the plant discovered by Braun, and named *D. Sanderiana* by Messrs. Sander and Co. Mr. Linden can easily satisfy himself on this point by turning to the picture in *Belgique Horticole*, 1860, page 348.

The present state of the matter appears to me to be this: In 1888 Mr. J. Braun discovered in the German Cameroons a *Dracæna* which he succeeded in bringing alive to Berlin, where it was named in error *D. thalioides variegata*. A portion of the plants were secured by Mr. Bluth, a Berlin nurseryman, who disposed of them to Messrs. F. Sander and Co., who named the species in compliment to the head of their firm. The name is only provisional, as the plant has not yet flowered; but until it can be identified with a species of *Dracæna* already described, or unless it turns out to belong to some other genus, Messrs. Sander and Co.'s name for it must stand. It has no more to do with *D. thalioides* than with *D. Goldiana*.—W. WATSON, *Kew*.



DENDROBIUM THYRSIFLORUM.

THE plant represented in the illustration (fig. 75), which has been prepared from a photograph taken by W. A. Milner, Esq., in his picturesque garden at Totley Hall, near Sheffield, had thirty-nine racemes of bloom on it, but fourteen were taken off to throw more substance in the other twenty-five which remained. Some of the racemes measured quite a foot in length, and carried as many as sixty to seventy flowers on a spike. We have five plants of *Dendrobium thyrsiflorum*, but not so good a variety as the one depicted in the engraving.

The plants are potted in peat and moss taken from the moors in this neighbourhood when required. While making their growth they are put in an average temperature of 60° to 70°, with plenty of moisture both at the roots and in the atmosphere. When the growth is completed they are removed to a temperature of 50° and water withheld to a certain degree but not altogether, they being usually watered once a fortnight. The plants have as much sun and light as possible to ripen their pseudo-bulbs.—T. BIRKENSHAW, *The Gardens, Totley Hall*.

#### MAXILLARIA HARRISONIÆ.

THIS excellent Orchid blooms very freely during the winter and early spring months. All the parts of the flower are large and fleshy, and the two lower sepals are joined and elongated at the base, forming a sort of spur. The sepals and petals are creamy white, the lip purple and yellowish, with numerous lines of bright red in the interior. There are several varieties of *M. Harrisoniæ*, differing from the species mostly in the colour of the flowers, which in every case have a slight pleasing odour. A large number of generic synonyms exist, of which *Lycaste* is more common than any other, says the "Garden and Forest," although it is many years since Reichenbach referred the plant to the genus *Bifrenaria*.

*M. Harrisoniæ* and its varieties make most satisfactory progress in the cool Orchid house, the low temperature and moist atmosphere of which seems to suit them. Forty-five degrees, Fahrenheit, is a good average night temperature in winter, and strong sunshine should be guarded against at all times. A good supply of water is always necessary, and the drainage material should, therefore, be ample. The plants may be potted in rough peat-fibre, mixed with a little lumpy charcoal, any time after the flowering season.



## ODONTOGLOSSUM CITROSUM.

THIS is an Orchid which well repays the little trouble needed to grow it well, the long pendant racemes making it one of the very best for hanging baskets. It must be liberally treated to obtain the best results. A sunny position in the cool end of the Cattleya house will suit it perfectly. It requires plenty of water while making its growth, but when this is complete it must be kept quite dry until the flower spikes show in the top of the young growths in the spring.

## ONCIDIUM CUCULLATUM.

Good forms of this pretty little Orchid are very attractive, and the length of time the flowers remain fresh is greatly in their favour. The flowers are bright rosy purple, with darker spots on

Birmingham. This statement cannot be confirmed, as the specimen is not preserved in the author's herbarium. Schiede's specimen is very imperfect, having lost all its flowers, though there are four loose ones in a capsule attached to the sheet. One only has the lip denticulate at the apex, as in Lindley's description and drawing the others evidently belong to another species, but none of them agree with the one now described. If the flower just mentioned really belongs to Schiede's specimen, *P. carinatum* has flowers scarcely half as large as those of the present species. The lobes of the sepals of *P. Lindleyi* are deep orange-red or brick-red in colour, the tube and the rest of the flower light green. It may be placed next to *P. Loddigesii*, *Lindl.* Good specimens of *P. carinatum*, *Lindl.*, and *P. emarginatum*, *Lindl.*, would be welcome, as both are very imperfectly known.—(*Kew Bulletin*.)



FIG. 75.—DENDROBIUM THYRSIFLORUM.

the lip. A cool airy position, with plenty of moisture at the root, will ensure healthy plants.—H. R. R.

## PHYSOSIPHON LINDLEYI.

THIS is the largest-flowered *Physosiphon* known, the flowers measuring fully seven lines in length. A specimen, sent for determination by Mr. F. W. Moore, Glasnevin Botanic Garden, Dublin, in April, 1892, without any note of its origin, proves identical with a dried one collected by M. J. Linden as long ago as 1840 near Chiapas, Mexico. This specimen is wrongly labelled by Lindley "*Physosiphon carinatum*," a species described by him in 1838 ("*Bot. Reg.*," xxiv, Misc., p. 72), from a specimen collected by Schiede, near Sosocola, Mexico. Lindley also states that it had been obtained in a live state from Mexico by Mr. G. Barker of

## BULBOPHYLLUM RACEMOSUM.

THIS distinct *Bulbophyllum* is nearly allied to *B. anceps* (Rolfe, in "*Lindenia*, viii, p. 33, t. 351), which is also a native of Borneo. In general habit the two resemble each other quite as much as they differ from most other known species of the genus, but the present species has much larger flowers than *B. anceps*. They are honey-coloured, the dorsal sepals and petals spotted with maroon, and the lateral sepals minutely spotted on the upper half, and striped on the lower one with the same colour. The lip is purple, covered with numerous black dots, paler near the tip. The face of the column, also its foot, is spotted with purple on a pale ground. It flowered, says the "*Kew Bulletin*," in the collection of Sir Trevor Lawrence, Bart., of Burford, Dorking, last August, when it was sent to Kew for determination.





## ROSE SHOW FIXTURES IN 1893.

- June 20th (Tuesday).—Westminster (N.R.S.).  
 „ 22nd (Thursday).—Ryde.  
 „ 24th (Saturday) Reigate.  
 „ 28th (Wednesday).—Clifton,\* Earl's Court, and Richmond (Surrey).  
 „ 29th (Thursday).—Eltham, Newport, and Windsor.  
 July 1st (Saturday).—Crystal Palace (N.R.S.).  
 „ 4th (Tuesday).—Bagshot, Canterbury, Diss, and Gloucester.  
 „ 5th (Wednesday).—Croydon, Dursley, Ealing, Hereford, and Lee\*.  
 „ 6th (Thursday).—Bath, Farningham, Norwich, and Sutton.  
 „ 7th (Friday).—Hitchin.  
 „ 11th (Tuesday).—Harleston and Wolverhampton.†  
 „ 12th (Wednesday).—Earl's Court and Tunbridge Wells.  
 „ 13th (Thursday).—Worksop (N.R.S.), and Woodbridge.  
 „ 14th (Friday).—Helensburgh.  
 „ 15th (Saturday).—New Brighton.  
 „ 20th (Thursday).—Trentham.  
 „ 21st (Friday).—Ulverston.  
 „ 22nd (Saturday).—Manchester.  
 „ 25th (Tuesday).—Tibshelf.  
 „ 27th (Thursday).—Halifax, and Southwell.  
 „ 29th (Saturday).—Bedale.

\* Shows lasting two days. † Shows lasting three days.

I shall be glad to receive the dates of any Rose Shows not mentioned above for publication in my next list of fixtures, which will be issued early in June.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

## THE REIGATE SHOW.

WE are requested to state that in consequence of the early season the date of the Reigate Rose Show has been altered from July 8th to Saturday, June 24th.

## ROSE TURNER'S CRIMSON RAMBLER.

THOSE who, like myself, have visited most of the shows held in and around the metropolis this year cannot fail to have noticed the above charming Rose. It is perhaps one of the most showy Roses in cultivation. It appears to belong to the Polyantha class, and is a vigorous grower, hence its name. Most of the plants exhibited, however, and which I have seen, have been grown as bushes in pots, for which purpose it seems admirably adapted. The flowers are produced in clusters in immense numbers, and are of a brilliant crimson colour. So far as I can ascertain this Rose is quite hardy and may be grown out of doors, the introducer, Mr. C. Turner of Slough, claiming that it is adapted for growing on fences and walls.—ROSA.

## THE OLDEST ROSE TREE.

THE enclosed cutting, *re* the oldest Rose tree, from a newspaper may interest some of your readers, and I should like further information on the subject if it can possibly be obtained. The extract is to the effect that the "oldest Rose tree grows in Hildesheim, a little town in Hanover, from the cellar of the cemetery church. Its roots are in the cellar, and the original stem died long ago, but the young stems pass through a crevice in the wall, and cover with their branches nearly the whole of the church for 40 feet in height and width. The age of this Rose tree is interesting to both botanists and gardeners. According to tradition the tree was planted by Charlemagne in the year 833, and after a conflagration in the church in the eleventh century the root continued to grow in the cellar. Herr Roemer has now issued a pretty book about this venerable bush, and he proves that it is at least 300 years old. It is mentioned in a poem written in 1690, and also by a Jesuit writer who died in 1673. Even then it was very old, so that, even if we do not believe the tradition, it is the oldest bush known in the world. It is a Dog Rose, which may have been grafted; but since the death of the main stem its normal branches have grown. Another extremely old Rose tree grows in Ober-Haverbeck, at Soltau. Its stem has a circumference of 33 inches, while its ten branches attain circumferences of from 7 inches to 11 inches." What is the opinion of rosarians? —SUBURBANIST.

## THE CEDARS, WELLS.

THE Cedars, the residence of C. C. Tudway, Esq., is situated on the outskirts of the small but picturesque city of Wells. The group of Cedars from which the mansion takes its name is immediately in front, and divided from it by a thoroughfare named "The Liberty." These trees are of great age, and are said to have been exceptionally fine specimens. Time, with its erratic quota of warm smiles and cold boisterous storms, has evidently done much first to build up and consequently to maim and partly wreck these venerable trees.

Cedars are represented by magnificent specimens in the extensive grounds, *C. Libani foliis argenteis* being exceptionally fine at one end of the flower gardens. Along one side of the broad path which leads

from the mansion to the pinetum or coombe we noticed among other choice things symmetrical and mature examples of *Retinospora glauca* and *Cupressus Lawsoniana*, together with clumps of foliage and flowering shrubs, the whole forming a background for a long, narrow border, chiefly of herbaceous plants, deftly arranged to avoid the formal and rigid appearance so fatal to the effect of many arrangements in situations of this kind. Close to the extremity of this border is a large *Liriodendron tulipifera*, which yields immense quantities of its quaint Tulip-like blossoms in season for the many decorative purposes to which they are adapted.

Passing from the pleasure grounds proper to the interesting pinetum, which we enter on the south-east side, we are at once struck with the magnificence of the trees, situated as they are, some on the brow of a steep hill surrounded by dense undergrowth; others on the sward above, solitary, irregularly arranged, yet symmetrical and majestic in their individuality, associated here and there with dwarf foliage or flowering shrubs which render their large proportions the more evident. Beyond the initial preparation and planting little has been done to render the Conifers what they are now. The soil is a deep, reddish medium loam resting on lias rock, with here and there a black or greyish humus a few inches deep. Cedars are prominent again here, *C. Libani glauca* being very fine; *Pinus Morinda*, *P. sylvestris altaica*, *P. strobus*, *P. (Abies) cephalonica*, *P. (Picea) pinsapo* and many others are also good.

From the pinetum we come to a lawn, at one end of which is situated the finely appointed dairy, the manager, Mr. Walmer, being custodian of the coombe. Some of the rooms facing the lawn are fitted as a museum of curiosities, and are brimful with mementoes of the travels of various members of the family in many lands. The whole is clad externally with Ivy and trailing shrubs, and is extremely pretty. Returning along a winding path on the opposite side, and towards the point at which we entered, we passed huge Chestnuts, standard and bush Mays, and a multitude of other flowering trees and shrubs, which, viewed from the paddock below when in bloom, are said to be a gorgeous sight.

Fruit is largely in demand, and four roomy vineries and two Peach houses are heavily taxed of their specific products towards the supply. Mr. T. Wilkinson, who has been gardener here for several years, but who was about to leave for a more lucrative appointment at the time these notes were taken, has done good work among the Grapes, and indeed in all departments here. All the Vine borders were made, and, with the exception of one vinery, young canes planted under his care. He allows the laterals ample extension; in fact, the roof and front lights seemed covered with strong vigorous growths, more like healthy canes than laterals. The sub-laterals are pinched close. Immense crops of fine fruit are taken from these Vines annually, and if treated as well as they evidently have been in the past, will remain youthful and produce magnificent crops for a great many years to come. The roots are outside in rather wide and high borders, the surface bristling with small fibres. Feeding is largely done with sewage and Thomson's Vine manure. The Peaches and Nectarines were well furnished with medium-sized fruitful wood, and the houses densely packed with *Chrysanthemums*, of which about 500 plants are grown for large bloom. The Melon house at the time of my visit was full of flowering plants, a large plant of *Gloriosa superba* being in fine flower on the roof of one compartment.

The plant stove—a span-roofed house—contains many good things, including *Anthurium crystallinum*, with large shapely leaves; *Gonio-plebium subauriculatum*, a very large plant with immense trailing fronds. Orchids are in evidence and in capital condition; two immense plants of *Cœlogyne cristata* with hundreds of pseudo-bulbs and many flower spikes. The leaves are long, glossy, and a very dark green. The plants are regularly and heavily fed with sewage. On a plant of *Cattleya Trianae*, suspended over the path, we counted seventeen flower sheaths, all robust, with every prospect of flowering. This is also treated to a course of sewage during the period of growth. *Lælia anceps* in the same position was carrying eleven flower spikes. *Cattleyas*, *Dendrobiums*, *Cypripediums* in variety, with a large batch of *Calanthes*; also *Sophranitis grandiflora*, and *Phajus Wallichii* are evidently at home in this house. The greenhouse in the same range and similar in proportions to the stove contained some large Indian *Azaleas* on the centre bed, the side staging being well stocked with *Primulas* and other softwooded plants. An advance is being made here with *Carnations* of the *Malmaison* type, a number of vigorous plants being in evidence.

A large and excellent selection of hardy fruit is grown, and there being a great deal of wall space protected with glass copings, much fine fruit is gathered. Mr. Tudway takes a keen interest in everything pertaining to the garden, and the collections both of fruits and plants are being steadily augmented.—W. R. W.

## EARL'S COURT SHOW.

MAY 18TH AND 19TH.

A SPECIAL Show of Orchids, miscellaneous plants, cut flowers, and fruit was held at the Gardening and Forestry Exhibition at Earl's Court on the above dates. Some exhibits were staged in the Exhibition buildings, but the majority of them were arranged in a large marquee in the grounds. It was not quite such a large show as was generally expected, although the plants and flowers staged made a good display.

In the open class for a group of Orchids and foliage plants Mr. H. James, Castle Nursery, West Norwood, the only competitor, was accorded the second prize. The group included *Cattleyas*, *Odontoglossums*



Cypripediums, *Lælia purpurata*, *Cymbidium Lowianum*, *Crotons*, Ferns, *Asparagus plumosus*, and Palms. Had there been more Orchids in this exhibit it would have been much enhanced in effect. In the amateurs' class for a similar group arranged for effect Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, was awarded the first prize. This exhibit included *Cattleya Mossiæ*, *C. Mendelli*, *Cypripediums* in variety, *Dendrobiums*, *Odontoglossums*, *Lælia purpurata*, *Cymbidium Lowianum*, *Dracænas*, *Crotons*, Maiden-hair Ferns, *Caladiums*, and few large Palms. The plants in this group were finely grown, and arranged with admirable effect. Mr. W. Howe, gardener to H. Tate, Esq., Park Hill, Streatham Common, was accorded the first prize in the class for a group of *Dracænas*, staging fine clean plants. The second prize went to Mr. A. Offer, gardener to J. Warren, Esq., Handcross Park, Crawley, for a very meritorious exhibit, and the third to Mr. H. James. For a group of *Crotons* Mr. W. Howe was awarded the second prize, being the only competitor. The plants were fine, having a clean and healthy appearance.

Mr. Charles Turner, Royal Nurseries, Slough, the only exhibitor in this class, was awarded the first prize for *Pelargoniums*, showing magnificently grown plants of *Lady Carrington*, Duke of Norfolk, The Czar, Ellen Beck, East Lynne, Princess Teck, *Delicatum*, Gold Mine, Statesman, Ambassadors, The Shah, and Magpie. Mr. C. Turner was again first for a group of *Souvenir de la Malmaison* Carnations. The plants were splendidly grown, and carrying flowers of extraordinary size and substance. This exhibit was undoubtedly a feature of the Show. For a group of *Roses* Mr. Turner was also first, showing beautiful examples of *Ulrich Brunner*, *Camille Bernardin*, *Thérèse Levet*, *Juno*, *La France*, *Margaret Dickson*, *Victor Verdier*, Mrs. Laxton, and Turner's *Crimson Rambler*. Messrs. Paul & Son, The Old Nurseries, Cheshunt, were awarded the second prize in this class, the group including *Princess Levet*, Dr. Andry, Mons. Furtado, Queen of Queens, Her Majesty, *Francisca Kruger*, *Céline Forestier*, and *Alfred Colomb*. Mr. Turner was likewise first for a group of greenhouse *Azaleas*. The plants in this group were symmetrical in shape and covered with flowers. The following varieties were well represented:—*Cordon Bleu*, *Madeleine*, *Reine des Pays Bas*, *Etendard de Flandres*, *Duc de Nassau*, *Jules Verne*, *Madame Van Houtte*, *Roi d'Holland*, *Jean Vervaene*, *Bijou de Paris*, Mrs. Turner, and *Bernard Andreas Alba*. Mr. A. Offer was awarded the second prize in this class, showing very creditable examples of *Souvenir de Prince Albert*, *Duc de Nassau*, *Madame Dupre*, *Brilliant*, and *Baron Stigula*.

Cut flowers were not so plentiful as might have been expected. The first prize for twelve bunches of cut Orchids, distinct, went to Mr. J. Prewett, Swiss Nursery, Hammersmith. The varieties shown were *Cypripedium Lawrenceanum*, *Cymbidium Lowianum*, *Odontoglossum citrosum*, *Cypripedium caudatum*, *C. hirsutissimum*, *C. Argus*, *C. batabum*, *Cattleya Mendelli*, *C. Mossiæ*, *Lælia purpurata*, *Odontoglossum vexillarium*, and *O. Alexandræ*. Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, was a good second. The best flowers in this exhibit were *Lælia purpurata*, *Cattleya Mossiæ*, and *C. Mendelli*. Mr. J. Prewett was awarded first prize for a basket of Orchids. This contribution was charmingly arranged, the principal flowers being *Masdevallias*, *Cattleyas*, and *Odontoglossums*, set in *Adiantum gracillimum* and *Asparagus plumosus*, on a groundwork of *Adiantum farleyense*. Mr. G. Wythes was second with a less showy arrangement. Mr. Perry, gardener to J. C. Tasker, Esq., Middleton Hall, Brentwood, had a collection of *Canna* blooms, for which an extra prize was awarded. These flowers were very fine, and it is a wonder that they are not more generally grown. The best varieties were *Madame Crozy*, *Louis Thibaut*, *Progression*, *Sophie Buckner*, and *Edward Andie*. Messrs. Paul & Son, Cheshunt, had a box of single *Roses*, also plants of *Cannas* *Sophie Buckner* and *Comte de Ganay*, for which first-class certificates were awarded. Mr. Geo. Mount, Rose Nurseries, Canterbury, was accorded the first prize for a box of twelve distinct cut *Roses*. He staged beautiful flowers of *La France*, *Maréchal Niel*, *Ulrich Brunner*, *Anna Ollivier*, *Duke of Wellington*, Mrs. John Laing, *Duke of Edinburgh*, *Niphetos*, *Thomas Mills*, *Comtesse de Nadaillac*, *Catherine Mermet*, and *Jean Ducher*. The same exhibitor also staged a collection of cut *Roses*, for which a silver medal was awarded.

Miscellaneous exhibits were rather numerous and of a diversified character. Mr. Anthony Waterer, Knap Hill, sent a group of *Azaleas*, for which an extra prize was awarded. Mr. T. S. Ware, Hale Farm Nurseries, had a collection of hardy flowers. Amongst these *Spiræa palmata*, *Lilium Harrisii*, *Pyrethrums* in variety, *Inula grandiflora*, and *Iris*es were conspicuous. An extra prize was awarded. Mr. Ware also had blooms of *Pride of Great Britain* *Carnation*. Mr. J. A. Morris, Acton, had two hampers of *Coleus* *Distinction*. Messrs. Sutton & Sons, Reading, were adjudged a silver-gilt medal for a splendid collection of *Perfection Calceolarias*. Messrs. J. Cheal & Sons, Crawley, sent a number of Apples, Pears, and hardy flowers, for which an extra prize was awarded. Mr. A. Offer showed a group of flowering plants, including *Erica Cavendishi*, *E. ventricosa coccinea minor*, *E. magnifica*, *Statice profusa*, *Hedera fuchsoides*, *Anthurium Scherzerianum*, *Aphelaxis macrantha purpurea*, all of which were examples of excellent cultivation. The group was deservedly awarded an extra prize. Messrs. W. Balchin & Son, Hassocks Nurseries, Sussex, were awarded an extra prize from a group of splendidly flowered *Leschenaultia biloba major*. Messrs. Peter Barr & Son, King Street, Covent Garden, staged a collection of herbaceous plants, for which they were accorded an extra prize. Amongst others were *Pyrethrums*, *Poppies*, *Tulips*, *Lupins*, *Gladioli*, *Centaureas*, and some grand *Pæonies*. The same firm sent a

splendid collection of *Iris* in variety, and some alpine plants, for which another extra prize was awarded.

Fruit was fairly well represented. In the class for three bunches of black Grapes, any variety, there were four competitors. Mr. J. McIndoe, gardener to Sir J. W. Pease, Bart., Hutton Hull, Guisborough, was placed first for three well coloured bunches of *Black Hamburg*. Mr. T. Osman, gardener to L. J. Baker, Esq., Ottershaw Park, Chertsey, was awarded second prize for *Black Hamburgs* of good size, but not so finely coloured as Mr. McIndoe's Grapes. Mr. G. Thompson, gardener to Messrs. W. & E. Wells, Hattenhurst, Hounslow, was third. Mr. McIndoe was also first for three bunches of white Grapes, showing fine examples of *Foster's Seedling*. The second prize went to Mr. E. Longley, gardener to W. J. Twigg, Esq., Croxted House, West Dulwich. Mr. J. McIndoe was again first for a dish of *Cherries*, staging some fine *Black Tartarian*. Strawberries were very good. For one dish, comprising twenty-five fruits, Mr. G. Norman, gardener to the Marquis of Salisbury, Hatfield House, Herts, was awarded first prize for splendidly grown *Auguste Nicaise*. Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich, was second with a dish of *Gunton Park Strawberry*. This is a dark coloured variety with medium sized fruits, which emit a delightful aroma. Mr. G. Thompson, Hounslow, was third, showing some well-grown *Sir Charles Napier*. Mr. G. Norman also staged half a dozen fruits of *Royal Sovereign* and *Laxton's Sensation*, for which first-class certificates were awarded. The first prize for three dishes of Strawberries also went to Mr. Norman. This exhibitor staged splendid fruits of *Vicomtesse Héricart de Thury*, *Competitor*, and *Sir Charles Napier*. Mr. W. Allan was second with *Lord Suffield*, *Empress of India*, and *Gunton Park*.

Mr. W. Robins, gardener to Colonel Lee, Hartwell House, Aylesbury, was first with six Peaches, showing splendid fruits of *Alexander*, well coloured. Messrs. T. Rivers & Son, Sawbridgeworth, was a close second with very fine *Hale's Early*, Mr. J. McIndoe following with well grown *Grosse Mignonne*. Messrs. T. Rivers & Son were first for six *Nectarines*, exhibiting grand fruits of *Early Rivers*. For a box of this variety, also shown by the same firm, an extra prize was awarded. Fruits of *Lord Napier*, small and green, were shown for comparison, these having been forced in the same house as *Early Rivers*. Mr. J. McIndoe was second with good examples of *Lord Napier*.

## WHITSUNTIDE SHOW AT MANCHESTER.

MAY 19TH-25TH.

THE great Exhibition of Orchids and other plants, which was opened at the Botanical Gardens, Old Trafford, on Friday last, and continues open until to-day (Thursday), formed a magnificent display. True, the competition was not so keen as one might have expected, but much care had obviously been expended to bring the exhibits to great perfection. The Orchids were arranged in the large Exhibition house, and, with the exception of the foliage plants, filled every portion of the building. The annexe was taken up with the groups of plants and Ferns arranged for effect, cut flowers, and a grand collection of *Rhododendrons* planted out, and belonging to Messrs. J. Waterer & Sons, Bagshot.

For the best miscellaneous collection of Orchids in bloom the prizes were £30 and £20. The former was taken by Geo. Hardy, Esq., with perhaps one of the most charming arrangements ever seen, and covering the whole of the east end of the Exhibition house. The background and sides were filled with foliage plants, the front being occupied by a dell of Orchids. In the central portion the larger plants were arranged, consisting of *Oncidiums*, *Lælias*, and *Dendrobiums*, several fine *Vandas* showing up well against the background of foliage. The frontal portion at each corner was divided from the central by walks of green moss, and here small *Cattleyas*, *Odontoglossums*, *Maxillarias*, and *Epidendrums* were admirably arranged, imparting sufficient tone of colour. The second prize went to F. Hardy, Esq., a son of the above named gentleman, and although containing excellent specimens, in many respects admirably grouped, yet there was a lack of finish through insufficiency of groundwork. In the nurserymen's class the prizes were £20, £15, and £10. Only two competed—viz., Messrs. J. Cypher & Sons, Cheltenham, and Heath & Sons of the same town. The former were well to the fore with an admirable arrangement throughout, containing splendid pieces of *Lælia purpurata*, conspicuous being *Hardyana* var., *Odontoglossums*, and *Oncidiums*. Messrs. Heath & Sons' group contained *Cypripedium Lawrenceanum* and *Lælia purpurata* in varieties.

For thirty Orchids in bloom only one competed, Thos. Statter, Esq., having a meritorious collection. The best were *Odontoglossum hastilabium* (one spike, forty-three flowers), *Cypripedium caudatum* in an 8-inch pot (thirteen flowers), *Lælia purpurata ponderosa*, *Oncidium superbiens*, *Epidendrum J. O'Brien*, and *Odontoglossum Pescatorei*. The prize in this class was a silver cup value 20 guineas presented by the late Earl of Derby. For the best collection of *Cypripediums* in bloom the first prize was a silver cup value 10 guineas, presented by O. O. Wrigley, Esq., Bury. George Hardy, Esq., was an easy winner, Mr. Cypher being second. For the ten best specimen Orchids a silver cup value 10 guineas was presented by Joseph Broom, Esq., J.P., Chairman of the Council. The same exhibitor was first with grand plants, the best being *Cymbidium Lowianum* (some twenty spikes), *Lælia purpurata* (twenty-six flowers), *Dendrobium thyrsiflorum* (seventeen spikes), *Cattleya Mossiæ*, (about seventy flowers, forty expanded), *Lælia purpurata* (very fine variety, deep lip, twenty-two flowers), *Dendrobium Wardianum* (thirty



spikes). Mrs. Hodgkinson was a good second with *Cymbidium Lowianum*, *Lælia purpurata* (twenty flowers), *Dendrobium splendidissimum* *Leeanum* as the best.

For a collection of *Cattleyas* Mr. Hardy was again first, showing a choice assortment, the best being *C. Mossiæ superba*, twenty-four flowers; *C. Marmorata*, twenty-six flowers; *C. Lawrenceana*, sixteen flowers; *C. Mendeli aurea*, and *C. Mendeli Firthi*. H. Shaw, Esq., had a collection arranged with Ferns, chiefly of the *Mossiæ* varieties, for second honours. The first prize, a silver cup, in this class was presented by Wm. Tattersal, Esq., J.P., Vice-President of the Society. The same gentleman secured the silver cup presented by Thos. Statter, Esq., for the best collection of *Dendrobiums* in bloom, staging eighteen plants, the most noticeable being *Dendrobium thyrsoiflorum*, *Walkerianum*, *nobile*, *Cypheri*, *Deari*, *crassinode*, *Bensoni*, and *suavissimum*. Mr. James Cypher was second. The best *bonâ fide* Orchid in the Show was staged by Mr. Hardy, the prize Williams' Memorial medal and £5 being awarded for a *Cattleya Reineckiana* with sixteen flowers. For the best collection of *Odontoglossums* in bloom (prize, silver cup value 10 guineas, presented by Geo. Hardy, Esq.), Wm. Thompson, Esq., was accorded first honours, the second prize exhibit being staged by F. Hardy, Esq. Thos. Statter, Esq., was first for the Sander prize, a cup value 15 guineas, for the best new Orchid in bloom, the favoured variety *Odontoglossum mulus Statteriana*. Mr. G. Hardy staged two plants in this class—*Odontoglossum Wattianum*, Hardy's variety, which ran the former very closely, and *Cypripedium Hardy-anum*, a finely flowered plant, which was struck out as being synonymous with *C. macrochilum*. Mr. Statter secured the Veitch Memorial medal and £5 for the best hybrid Orchid in bloom already in commerce with *Cypripedium Aylingi*, a pretty variety from *C. niveum* × *ciliolare*, carrying three flowers.

Herbaceous and alpine plants, Roses in pots, and Azaleas were not up to the usual standard, and call for little comment. For the former, a silver cup presented by S. Barlow, Esq., was won by R. P. Gill, Esq., Ashton-on-Mersey; second, Wm. Caldwell & Sons, Knutsford. James Brown, Esq., Longfield, Heaton Mersey, had Roses; and Miss Lord, Oakfield, Ashton-on-Mersey, Azaleas. For six bunches of Grapes, the first prize—silver cup, given by Dickson & Robinson, Manchester—went to the Duke of St. Albans, Bestwood, Notts.

The groups attracted attention. Messrs. R. P. Ker & Sons, Aigburth Nursery, Liverpool, secured first honours for a charming arrangement. The back portion was arranged in a sort of tier and balcony style, the latter extending prominently into the central portion of the group, and forming three half-circular recesses. These balconies and the background contained the usual array of foliage plants, whilst below the three recesses were filled with masses of well-flowered *Anthurium Schertzerianum* peeping from masses of Maidenhair Fern; then more to the fore a carpet of moss, with clumps of *Lilium Harrisii*, *Spiræa astilboides*, the two end pieces being made to represent tree trunks filled with small Palms and covered with creepers, the front being composed of an irregular band 2 feet wide of dwarf well-coloured *Crotons*, alternating with magnificent *Gloxinias* in flower. Nothing was crowded; the group was quite new in its detail, and the first prize worthily earned. The second prize went to Mr. A. J. A. Bruce, Chorlton-cum-Hardy, for a grand arrangement, well mixed both as regards foliage and flowers, and a great credit to those who arranged it. The third prize was secured by Messrs. Heath & Sons. In the amateurs' class the prize was £15, and seldom has a finer arrangement been seen. The second prize went to Miss Lord with a superb group, the only fault one could possibly find being that much more could have been made had the plants not been arranged so flat. The groups of Ferns formed welcome additions, the first prize going to Messrs. W. & J. Birkenhead, Sale; the second to R. P. Gill, Esq.; third, Miss Lord.

Every praise must be given to the trade for the grand display they made, this applying to the Orchids and new and rare plants, and in this department Messrs. Linden (Brussels) and Messrs. F. Sander & Co. (St. Albans) ran each other closely. The former exhibited a fine and healthy collection, containing *Lælia purpurata alba*, *Odontoglossum Victorinæ* (hybrid), *Cattleya Warneri splendens*, *C. Acklandæ Salmonæ*, *Masdevallia versicolor*, charming *Bertolonias*, *Smilax argyrea*, and *Dracæna thalioides foliis variegatis*, and were unanimously awarded the Society's gold medal. The same award was made to Messrs. Sander and Co. for a splendid group, the most beautiful amongst the Orchids being *Sobralia macrantha alba*, *Phaius Sanderiana*, *Cattleya Mossiæ*, *C. Wagneri aurata*, *C. Loddigesi Measuresiana*, *C. Mendeli Sanderiana*, and *Odontoglossum crispum Owenianum*. The other new and rare plants from St. Albans comprised *Dipladenia atro-purpurea*, *Arisæma fimbriata*, *Alocasia Watsoniana*, *Acalypha Hamiltonianum*, *Dracæna Sanderiana*, *Strobilanthus Dyerianus*, *Pandanus Baptisti*, *Ceratolobus Findlayanus*, *Cincreria maritima variegata*, and *Maranta Leonia*. Messrs. Charlesworth, Shuttleworth & Co., Bradford, had a splendid group, admirably arranged, and containing *Oncidium macranthum*, *Grammotophyllum Measuresianum*, a fine piece with six strong spikes, *Oncidium Marshallianum*, *Cymbidium Lowianum*, and *Cattleya gigas imperialis*.

Extra prizes were awarded. Messrs. B. S. Williams & Son, Upper Holloway, had Orchids and flowering plants which made a feature of the Show. Messrs. Hugh Low & Co. had a most meritorious exhibit, prominent being a box of *Cypripedium bellatulum* containing twenty-four plants, *Cattleyas* and *Lælias*, and many others of choice merit. W. L. Lewis & Co., Southgate, had pleasing arrangements of Orchids, containing some really superb plants in the best of health, and Messrs.

Cypher & Co. for an artistic group of flowering plants, which made a pleasing feature in the annexe. Messrs. R. Smith & Co., Worcester, staged a fine group, containing well flowered *Clematis*, *Rhododendrons*, *Pyrethrums*, and *Pæonies*. Dickson Limited, Chester, made a fine display of cut flowers, in all some seventy vases. Messrs. Harkness and Sons, Bedale, had cut flowers and Roses, and W. Balchin & Sons *Leschenaultia biloba major*. Messrs. J. Peed & Sons, Roupell Park Nurseries, sent *Caladiums*, and Mr. T. S. Ware a collection of *Pride of Great Britain Carnation*. Mr. James Mason, Ashton-on-Mersey, staged a group of miscellaneous plants, Miss Hopkins *Violas* and cut flowers, and Miss Lord herbaceous *Calceolarias*.

The Stott Company had a most interesting exhibit. Several certificates were granted.—R. P. R.

## BUTLEY TULIP SOCIETY.

THE sixty-eighth annual Exhibition of this Society was held at the Orange Tree Inn, Butley, near Macclesfield, on Friday last, May 19th, and there was a good muster of growers and friends. The flowers were numerous, and in most of the classes above the average in quality. The principal prize at Butley is a silver cup for the best stand of six rectified Tulips, one in each class, presented to the Society by the President, S. Barlow, Esq., of Stakehill. Six stands were staged for the cup, and the Judges awarded it to the stand exhibited by Mr. Barlow. His flowers were Sir J. Paxton, flamed bizarre; Garibaldi, feathered bizarre; Mabel, flamed rose; Heroine, feathered rose; Elizabeth Pegg, feathered bybloemen; and Talisman, flamed bybloemen. The stand was a first-rate one, especially the three feathered blooms. Mr. W. Kitchen of Marple had the next best stand.

### SINGLE BLOOMS.

#### Feathered Bizarres.

- 1, Mr. Barlow with Lord Stanley.
- 2, Mr. Barlow with Garibaldi.
- 3, Mr. Needham with W. Wilson.
- 4, Mr. Barlow with Lord Stanley.
- 5, Mr. Kitchen with Lord Lilford.
- 6, Mr. Barlow with Sir J. Paxton.
- 7, Mr. Kitchen with Sulphur.
- 8, Mr. Dymock with Seedling.
- 9, Mr. Bentley with Royal Gem.
- 10, Mr. Dymock with Seedling.

#### Flamed Bizarres.

- 1, Mr. Bentley with Sir J. Paxton.
- 2, Mr. Bentley with Sulphur.
- 3, Mr. Barlow with Sir J. Paxton.
- 4, Mr. Needham with Dr. Hutcheon.
- 5, Mr. Bentley with Dr. Hardy.
- 6, Mr. Bentley with Richard Yates.
- 7, Mr. Chadwick with Masterpiece.
- 8, Mr. Bentley with Wm. Wilson.
- 9, Mr. Bentley with Lord Sydney.
- 10, Mr. Bentley with Lord Delamere.

### Flamed Bybloemens.

- |  |  |
|--|--|
| 1, Mr. Jones with Bertha.                | 1, Mr. Barlow with Adonis.                 |
| 2, Mr. Kitchen with Violet Aimable.      | 2, Mr. Bentley with Chancellor.            |
| 3, Mr. Dymock with King of the Universe. | 3, Mr. Bentley with Friar Tuck.            |
| 4, Mr. Jones with Bertha.                | 4, Mr. Kitchen with Talisman.              |
| 5, Mr. Kitchen with Bienfait.            | 5, Mr. Dymock with Lord Denman.            |
| 6, Mr. Needham with W. Parkinson.        | 6, Mr. Barlow with Adonis.                 |
| 7, Mr. Barlow with W. Bentley.           | 7, Mr. Kitchen with Stanley.               |
| 8, Mr. Jones with Mrs. Cobden.           | 8, Mr. Kitchen with Duchess of Sutherland. |
| 9, Mr. Bentley with Friar Tuck.          | 9, Mr. Kitchen with Prince of Morocco.     |
| 10, Mr. Bentley with Miss Johnson.       | 10, Mr. Dymock with Seedling.              |

### Feathered Roses.

- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| 1, Mr. Needham with Mabel.            | 1, Mr. Kitchen with Mabel.            |
| 2, Mr. Kitchen with Edith.            | 2, Mr. Dymock with Queen Henrietta.   |
| 3, Mr. Bentley with Rachel.           | 3, Mr. Barlow with Madame St. Arnaud. |
| 4, Mr. Barlow with Modesty.           | 4, Mr. Bentley with Mabel.            |
| 5, Mr. Barlow with Madame St. Arnaud. | 5, Mr. Barlow with A. McGregor.       |
| 6, Mr. Barlow with Annie McGregor.    | 6, Mr. Jones with Martin's No. 2.     |
| 7, Mr. Kitchen with Queen Anne.       | 7, Mr. Kitchen with Aglaia.           |
| 8, Mr. Jones with Industry.           | 8, Mr. Kitchen with Triomphe Royale.  |
| 9, Mr. Kitchen with Julia Farnese.    | 9, Mr. Dymock with Seedling.          |
| 10, Mr. Chadwick with Mabel.          | 10, Mr. Kitchen with Rose Hill.       |

### BREEDERS.

For the best three stands of three breeders, one in each class.

- 1, Mr. Barlow with Sir J. Paxton, Miss B. Coutts, and Alice Grey.
- 2, Mr. Kitchen with Sir J. Paxton, Olivia, and Wm. Bentley.
- 3, Mr. Needham, with Sir J. Paxton, Miss B. Coutts, and Bridesmaid.

### SINGLE BLOOMS.

#### Bizarre Breeders.

- 1, Mr. Barlow with Sulphur.
- 2, Mr. Barlow with Hepworth's 15/64
- 3, Mr. Bentley with Sir J. Paxton.
- 4, Mr. Jones with Dr. Hardy.
- 5, Mr. Jones with Unknown.

#### Bybloemen Breeders.

- 1, Mr. Bentley with Alice Grey.
- 2, Mr. Bentley with Bridesmaid.
- 3, Mr. Bentley with Glory of Stakehill.
- 4, Mr. Barlow with George Hardwick.
- 5, Mr. Barlow with Elizabeth Pegg.

### ROSE BREEDERS.

- 1, Mr. Barlow with Miss Burdett Coutts.
- 2, Mr. Barlow with Madame St. Arnaud.
- 3, Mr. Bentley with A. McGregor.
- 4, Mr. Chadwick with Mabel.
- 5, Mr. Barlow with Industry.



The extra prize for the best flamed flower in the whole Show was given to Mr. Bentley for Sir J. Paxton, and the extra prize for the best feathered flower was given to Mr. Jones for Bertha.

### SHOW PANSIES AND MR. PETER LYLE.

THE Pansy is essentially a Scottish flower, at once the most popular with first-rate florists and the most generally grown by the ordinary floral amateurs, from John o' Groats to Maidenkirke. The Show Pansy is a cross between our native *Viola tricolor* and *V. cornuta*. The raiser is unknown, as also is the date; but we may assume from various incidental circumstances that the fortunate man was from the neighbourhood of Paisley in Renfrewshire, and the period about the year 1823. Singularly enough, this is also the year when Mr. Peter Lyle was born, who, more than any other Pansy grower, has developed the flower by raising some of the very best sorts we yet possess, while from his youth he has kept true to the love of his heart, and is even now as keen and successful a grower of the flower as ever he was, as the grand beds he had to show last summer testified. While many districts in Scotland are associated with Pansy growing, such as Campsie, Newmilns, Vale of Leven, and others, Paisley has been the headquarters, and Kilbarchan, five miles west of the county town, has been noted for the enthusiasm of its florists, and may be counted as second in eminence.

When Mr. Lyle was but a lad his zeal for gardening manifested itself in real hard work. So anxious was he to get his father's garden dug that he has done it three times in one spring ere the right time came, with just "the sid" of weather to justify the sowing of seeds. The Pansy growers from whom Mr. Lyle caught "the fever" were Wm. Campbell, Duncan Cairney, James Dick, James Gilmore and John Love, the last named being figured in the *Journal of Horticulture*, October 1st, 1891.

Raising seedlings was the great hobby of the time, and when Mr. Lyle was twenty-five years of age, he went to his first show in Kilbarchan in 1848. Before that date shows had been attended in Paisley, and a few friends met there from time to time in the evenings to discuss new blooms, and Mr. Lyle had to walk home in the dark the five miles to Kilbarchan. To him this was no hardship, as he has ever been wonderfully quick of foot, and his fine constitution and wiry frame are even yet remarkably evident. In the year 1850, or thereby, a great show of Pansies and other flowers took place in Falkirk, but Mr. Lyle did not attend it, travelling thirty miles was not so expeditiously performed then as now. An old friend of my own, however, attended that show, Mr. James Peddie, gardener to John Gordon, Esq., of Aikenhead, Cathcart. As a gardener and keen florist the West of Scotland had no other to equal him, and his taste in Pansies was perfect. Mr. Peddie's first competition in Pansies was at Falkirk, and when he staged his blooms all eyes turned on the young fair-haired gardener and his stand of flowers. The Secretary, the late Mr. Charles Jeffrey, at once was struck with the stand and complimented the exhibitor thereon, saying "he was sure no finer lot would be shown, and that this would be adjudged first." It was so, and from that day the real Scottish taste for Pansies may date, as thereafter the flower was a leading feature everywhere. I cannot name the blooms which were shown at Falkirk, but the following were the varieties most in vogue about that time—viz., yellow grounds—Duke of Norfolk, Robert Burns, Gilbert Burns, Sir Charles Napier; white grounds, Miss Talbot, Lizzie, British Queen, Mountain of Snow; yellow selfs, Wonderful and Climax.

In Glasgow on 9th September, 1852, in George's Square, set out in tents, the tug of war came which decided the Pansy championship, and a full report was inserted in the *Glasgow Herald*. Here Mr. Lyle met Mr. Peddie, and was awarded the first prize in gardeners' and amateurs' classes for twenty-four blooms in each. A friend informed Mr. Peddie that he was surpassed by a man who had only 9 yards of a garden. This was true, yet could not be believed; so a gentleman was sent out to Kilbarchan to prospect, and on his return declared that the fact was so, and further that from the same plants in that small garden Mr. Lyle could stage forty-eight blooms any day, which would defy Scotland to beat them. It will be historically interesting to name the blooms as well as to show the source of our present stock as exhibited at Glasgow Show in 1852. The gardeners' class were: *White grounds*, Franc Cycole, Lady Mackenzie, Aurora, Royal Visit. *White selfs*.—Princess Royal, Jerome, Queen of England, Marchioness of Breadalbane. *Dark selfs*.—Rainbow, Duke of Perth, Norah, Maggie Lyle, Othello, Marchioness of Lothian. *Yellow grounds*.—Duke of Norfolk, Pizarro, Polyphemus, Juventa, Supreme. There were two seedlings and Elegant, Sir Wm. Rae, and Lucy Neale. In the amateurs' class they were somewhat the same, varied by Gulnare, Napoleon, Princess Louisa, and Robert Burns. It is well to note that while to-day we have not one of these victorious varieties, we have some with similar names, as Robert Burns, which is still grown, but not the flower then exhibited. Again, there have been two distinct "Royal Visits" to commemorate Her Majesty's coming to Glasgow.

From this date a universal taste for Pansies took possession of our florists. High prices were paid for a small quantity of rare seed, and very soon the increase in fine flowers became notable, while the standard of excellence was gradually raised for form, colour, texture, belting, blotch, and last, but not least, the eye. These six points must be met in a bloom, each point being nearly perfect, or, if one is deficient, the flower is condemned. Size may be counted the seventh point; as, however well up the Pansy may be otherwise, if it is less than 1½ inch in diameter it is not well grown.

Mr. Lyle's success continued, as he was a frequent prizewinner, notwithstanding the extended ranks of competitors. Then his seedlings were famous, only the real beauties being sent out by him. Of many sorts raised, he often gave those away which friends admired, and his name as raiser was never linked with them at all, while the gems were eagerly sought after, and high prices given for them. For instance, for two, named Capt. Spiers and Emily Lyle, the late Wm. Paul gave him £7; then for a beautiful one named Maggie Lyle he received £3 10s. from Messrs. Begg & Paul, who brought it out; while for twenty cuttings of one or two promising seedlings he would be paid £1. Nurserymen gladly add to their collections in this way, as amateurs usually concentrate their energies on one class of flowers, and the result is, as with Mr. Lyle, very special successes. A few of the most famous Show Pansies, raised by various florists, are as follows:—Countess of Roslin, Hugh Austin, Lavinia, Lady Lucy Dundas, Miss E. Cochrane, The Countess of Strathmore, and Flower of the Day. Of dark selfs some were really fine, and if Rev. H. H. D'Ombra could be rediscovered to-day it would be yet prized. This one endured for more years than any other. Irene was introduced by Mr. Middlemass, and was very fine. The Black Douglas, and W. B. Spiers and Gem followed—the last a beauty, but small, though as a judge said, it was "guid, guid!" The late Thos. Hastie, of Strathaven, raised one long esteemed by growers,



FIG. 76.—MR. PETER LYLE.

called James Dalzell, and which we still grow. Later Luna, and then Alexr. Watt, and David Malcolm brings the tale down to recent years. A white ground (Jane Grieve) was, however, the greatest wonder perhaps of any Show Pansy ever introduced.

The method of culture pursued by Mr. Lyle may be of service to many lovers of his favourite flower. The cuttings are taken in September and set in cold frames in good soil and a little sand, lightly watered, and closed and shaded for a week or so, and air gradually admitted afterwards. During winter the frame is not kept rigidly closed, but raised a little to allow air to enter and escape in all ordinary weather, but closed in extreme frost. It is damp which destroys the Pansy. In March, if any fly appears, a little softsoap dissolved in water is syringed on the young plants and the pest destroyed. This is repeated before planting out. In April the plants are set out, in soil new to them, as if planted again in the previous year's bed disease sets in. None but well-decayed manure is used, and this is dug in during the previous autumn. The soil is moderately rich and open; heavy clay soil will not do. After rains, when the earth is sodden, stir it freely between the plants with a hand-fork. This admits air, and the Pansy, though fond of moisture, cannot endure it to be stagnant. Until the plants grow and look robust, pluck off all the flower buds that show. When liquid manure is given it must be very weak, and in dry weather the plants must not be allowed to flag. As to the much talked of disease, healthy plants to start with are the best preventive; while new soil, in which Pansies have not been previously grown, will almost certainly keep back the invader.

Mr. Lyle's garden faces the south, and has been in cultivation for 150 years. Since he entered it, in 1861, it has only been trenched twice. Not a weed is to be seen, and though narrow it is long. In trade a joiner, he has always been employed at home, and therefore well placed to give his flowers regular care. Now, when nearing three-score years and ten, he finds enjoyment and exercise sufficient for his abounding vitality in his garden. His foot is still light and buoyant,



and his cheery spirit gay as ever. His children are away from home, one only having opportunity to develop the paternal taste for flowers. His wife and he dwell in their own property, and are comfortable and free from worldly care. In March Mr. Lyle will sow Pansies in seed boxes, prick out the seedlings in April into his empty frame, and plant in open ground in June, and be as happy in September over his seedlings, with many friends, as if toil and hardship had never been nigh him all his days. New sorts will be added to the long list he has raised, let us trust even superior to Mauve Queen, Mrs. Jno. Bolton, Marquis of Lorne, Mrs. Gladstone, Mrs. Arthur, and the rest of his floral achievements, the praises of which we see in all the Pansy catalogues.

Many have worked in the same field with him, but to Mr. Lyle is due, more than to any other single person, the honour of having raised the Show Pansy to the perfection it has now reached.—ALEXANDER SWEET.



### FRUIT FORCING.

**Vines.**—*Early Muscats.*—Where these were started early in December, and they have been brought on steadily, the Grapes will now be ripening, and must not lack water at the roots. Examine the Vines every week, and if moisture be necessary give it liberally and at the mean temperature of the house. If the Vines have abundance of roots and are not exuberant, and the crop is heavy, supply tepid liquid manure, or top-dressings after moderate waterings, and wash in. The temperature should be maintained at 65° to 70° at night, with a little air at the top of the house, increasing the ventilation as soon as the sun acts on the house, keeping the heat at 70° to 75° on dull days, and 10° to 15° more from sun heat. Maintain rather dry warm air day and night, as the deposition of moisture on the Grapes is likely to produce spot, and its rapid evaporation from the berries results in scorching. No harm will occur provided proper attention is given to the ventilation, but if there is likely to be any danger arising from the border to the prejudice of the berries mulch it after watering with a couple of inches of short rather dry manure, and on this place about an inch thickness of coarsely chopped clean dry straw.

*Vines Started Early in the Year.*—Early Smyrna Frontignan, White Frontignan, Foster's Seedling, Buckland Sweetwater, Black Hamburg, Mill Hill Hamburg, and Madresfield Court are now ripening their crops, and though a rather drier atmosphere is desirable it is best secured by free ventilation. Have a little at the top of the house constantly, increasing it early in the morning, allowing a free circulation of warm air through the day. The inside border, also the outside, where the rainfall has not been sufficient to moisten it thoroughly, must have a good watering. A mulch of half-decayed manure will conserve the moisture and accelerate root action, which are necessary for the perfection of the crop and the health of the Vines. Good atmospheric moisture is essential to the proper swelling of the Grapes, the house being damped in the morning and in the afternoon until the berries are well advanced in colouring, when a drier condition of the atmosphere will be advisable. The temperature should be 65° at night, or 5° less when the Vines are heavily cropped and on cold nights, 70° to 75° by day artificially, increasing to 85° or 90° with sun and full ventilation, increasing this from 75°, and reducing it at 80°, at which close all but a small space at the top of the houses. Allow a moderate extension of the laterals, as a good spread of foliage without overcrowding is favourable to a perfect finish and the preservation of colour in the Grapes after they are ripe.

*Succession Houses.*—Stop or remove all growths not required, not allowing them to be made, and afterwards have to remove or reduce them in quantity, as it tends to a check favouring shanking. Let the laterals extend as far as space permits, not crowding the foliage unduly, but exposing the principal leaves fully to light and air, especially those that feed the pruning buds—those at their base for supplying the next year's crop of fruit. Thinning the bunches and berries must be attended to, removing duplicate bunches unflinchingly, and proceeding with thinning the berries as soon as they are fit. Supply water or liquid manure to the borders as required, yet avoid making the soil sodden and sour by needless waterings or cold and strong doses of liquid manure. Top-dressings of superphosphate encourage surface roots, and nitrates of potash and soda aid growth. Occasional sprinklings of the advertised fertilisers after a moderate watering and then washing them in improve the foliage and sustain the crop. A mulching conserves the moisture and is valuable where the soil is light and the roots near the surface, cow manure being best for light soils and horse droppings for heavy. A night temperature of 60° to 65° is sufficient, 70° by day artificially, ventilating from that point, and maintaining a good temperature (80° to 85°) from sun heat through the day. Close early, and increase the temperature to 90° or 95° with a plentiful supply of atmospheric moisture. Admit a little air at the top of the house before night, leaving the ventilation thus until it is necessary to increase it in the morning. An occasional damping of the floors and borders with liquid manure in

the evening greatly benefits the Vines, taking care not to produce too much ammonia vapour.

*Late Houses.*—The Vines are generally forward, and the aim should be to maintain the satisfactory progress by keeping a night temperature of 65°, 70° to 75° by day artificially, advancing to 80°, 85° or 90° through the day from sun heat. When in flower allow a night temperature of 70°, with 80° by day, and a free circulation of air, maintaining a genial condition of the atmosphere by damping available surfaces when they become dry. Attend to fertilising the shy setting varieties by brushing the bunches over with a camel's-hair brush to remove adhering caps and dispose pollen from the free-setting kinds over the bunches in a similar manner. Perform these operations carefully and not later than the early afternoon of fine days, preferably a couple of hours after the admission of more air. Remove duplicate bunches and avoid over-cropping and over-crowding the foliage as the greatest of evils. Commence thinning the free-setting kinds as soon as the berries are set; shy-setting varieties must not be thinned until the properly fertilised berries can be distinguished by their taking the lead in swelling. Reserve the best shaped and most compact bunches. Late Hamburgs need not be hurried.

*Houses of Ripe Grapes.*—When the Grapes are ripe fire heat will only be necessary to keep the temperature at about 60° at night, ventilating freely by day. Black Hamburgs will need a slight shade to prevent their losing colour. A single thickness of pilchard or doubled herring netting drawn over the roof lights will be sufficient. A moderate amount of air moisture is necessary for the benefit of the foliage, and it will not prejudice the keeping of the Grapes, but assist in preserving them plump, provided the atmosphere is not allowed to become stagnant. Encourage lateral growth, it tends to maintain the activity at the roots and to prevent premature ripening of the foliage, which must be kept clean and healthy as long as possible. Where fermenting materials were applied to the borders part of it may now be removed, leaving sufficient for a good mulch, and if the roots are active near the top a little fresh material may be placed on the surface to protect them from the atmosphere, but avoid heavy mulchings.

**Melons.**—Houses or pits in which the fruit is ripening will require a rather dry and warm atmosphere, allowing a circulation of air constantly, moderating the moisture at the roots. When the fruit is cut the growths may be cut back, a little of the old soil removed and fresh supplied, then the plants will soon make growth and set a second crop. Where, however, the plants are exhausted, or fallen a prey to red spider, they should be cleared out, the old soil removed, and the house be thoroughly cleansed. If fermenting materials have been employed for bottom heat, add some fresh, and mix with the top 12 or 18 inches of the old material, some of the most exhausted being removed. Make firm, and put in ridges or hillocks of good rather strong loam; if the loam is not calcareous add some old mortar rubbish and road scrapings. Tread the hillocks or ridges well down after they become warmed through, say in a couple of days. Make the soil firm about the plants, and the soil and balls being moist, no water will be needed until the roots have taken to the fresh soil. Shade from bright sun for a few days, and maintain a genial condition of the atmosphere by damping available surfaces in the morning and afternoon. Ventilate between 70° and 75°; keep through the day at 80° to 85° from sun heat, and close sufficiently early to increase the temperature to 90°–100°.

**Cucumbers.**—Plants that have been in bearing since the beginning of the year in a house may be cleared out, and the house being cleansed, it may be utilised for a late crop of Melon. If, however, the Cucumber plants are fairly healthy and the supply of fruit is still insufficient from pits and frames, they may be kept fruiting some time longer by removing the surface soil, and replacing with some lumpy loam, afterwards surfacing with some sweetened manure, giving a good soaking of tepid water or liquid manure. Thin out the old growths, and encourage young in their place. Shade from powerful sun, syringe the plants in the morning and afternoon, and damp well before nightfall. Fire heat need only be employed to maintain a temperature of 60° to 65° at night, and 70° to 75° in the daytime. Admit a little air at 75°, increase it with the advancing sun heat, keeping through the day at 80° to 85° or 90°, and close early in the afternoon so as to run up to 90°–100°.

Plants in pits and frames should be ventilated from 7.30 to 8 A.M., and in the hottest part of the day a slight shade from fierce sun will be beneficial, keeping through the day at 85° to 90°, close at 85°, and so early as to increase 5° to 10° or more from sun heat. Keep the plants watered as required, about twice a week being necessary in bright weather, and syringe them on fine afternoons. Avoid crowding the foliage, thinning well, keeping up a succession of young bearing wood, removing bad leaves, and stopping the shoots one or two joints beyond the show of fruit. Overcropping and allowing the fruit to remain on the plants after they become fit to cut greatly weakens them, and must be guarded against by timely thinning and cutting the fruit, which keep some time in a cool place, with the neck end inserted in a saucer of water. Straight fruits are not only handsomer and easier packed than the crooked, but they possess greater using value, therefore place the young fruit in glass tubes, or pieces of deal nailed together so as to form open ended troughs about 3 inches wide.

### THE KITCHEN GARDEN.

**Work after the Rain.**—The rainfall would appear to have been general, and never was more welcome. All the hard lumps on newly dug quarters have been well moistened through, and before they again become hard or baked by sunshine all ought to be reduced to a fine



state with coarse rakes and hoes if need be. This will serve to keep the ground in a moist state, and admit of seeds being sown and plants put out in dry hot weather. Especially ought the spaces between newly dug Celery trenches to be raked over, and then Lettuce can be planted, or, better still, seed be sown at fortnightly intervals where the plants are to heart in. Ground from which Broccoli, Brussels Sprouts, and Borecole have been cleared is usually well adapted for Celery culture, and no time should be lost in preparing the rest of the trenches. When this work is deferred to near the time the plants are ready to put out, there is a likelihood of the latter being spoilt owing to press of other work delaying their being transplanted, whereas, if the trenches are ready for them, advantage can be taken of a showery time to get them out quickly and well.

Rain fell very opportunely for the Potatoes. These have come up very strongly and evenly, and the first proceeding should be to hoe; that is to say, loosen the soil rather deeply between the rows, this having the effect of breaking clods, letting in warmth and moisture to the roots, and destroying weeds. Many of the early and second early varieties have grown so rapidly as to be forward enough for moulding up, while the very earliest that could not be moulded up during the dry weather, owing to the lumpy state of the ground, are really too forward to be interfered with now, and are best left as they are. Better run the risk of the uppermost tubers greening than injure either the haulm or spreading roots by hoeing among them.

Brussels Sprouts, autumn Broccoli, and Cauliflowers should be planted among dwarf early Potatoes directly these have been moulded up, but it is only where the rows are not less than 3 feet apart that this ought ever to be done. Slugs have had a bad time of it lately, but will have made it plain they are not all dead ere this. Frequent surface hoeings among advancing crops serve to prevent the increase of slugs, also proving beneficial otherwise, and crops that are most preyed on should have soot and lime dusted among and over them as often as rains wash these fertilising slug-destroying substances away.

**Onions.**—Where the seed was sown rather early there are fairly good rows of plants to be seen, but in many instances the Onions present anything but a satisfactory appearance. Most probably much of the seed that has hitherto failed will germinate after the rains, and the beds should not be hastily condemned accordingly. It is always a mistake to delay thinning-out till the plants are too large to draw readily, and this season there is all the more necessity to thin early, in order that the thinnings may be replanted where there are gaps to be filled up, or fresh rows may also be formed. Do not thin severely unless extra fine "bulbs" are desired. Supposing the rows are nearly or quite 12 inches apart, leave the plants from 3 to 4 inches asunder; and if they eventually press against each other so much the better, medium-sized solid roots being the most serviceable, also keeping best. Allow another 2 inches or rather more if extra fine Onions are wanted. Replant the thinnings 1 inch below the surface, spreading out the roots carefully, and fixing the soil firmly about them. If dry weather prevails water occasionally till they are growing afresh. Liberal surfacings of soot hoed-in during showery weather acts as a preventive of grub attacks, and hastens the growth of the Onions considerably; so also do light surfacings of nitrate of soda, or that and superphosphate of lime and kainit at the rate of one part of the former to two parts of each of the latter.

**Carrots.**—The Carrot seed again has germinated badly; but most probably much that has previously missed is now showing life, and the beds, in any case, should not be hastily hoed over and sown afresh. It is not, however, advisable to delay sowing afresh more than a fortnight after rainfall, and it will most probably be found that late-sown breadths will give better results than has hitherto attended early sowing. The ground being in a moist, warm state, germination and after growth will be unusually rapid and strong, and if seed of Nantes Horn, Model, or other medium-sized or stump-rooted sorts, sown now, even in cold localities, will grow to their full size by the autumn, and keep quite as well or better than larger roots, and which also are the least appreciated in the kitchen. In warmer localities the Intermediate and long-rooted forms may also be sown with the certainty that they will be quite large enough for storing in the autumn. The drills for the smaller varieties should be drawn 9 inches apart, 1 foot being enough for the rest. Thin the former lightly, or according as the roots are required for use, and the stronger growers may be left about 5 inches apart in the row. Left thus thickly the roots will not be nearly so coarse nor so liable to crack badly as when allowed another 3 inches or more.

**Parsnips.**—These have come up better than expected, and as a rule are quite ready for thinning out. Very large roots of Parsnips do not keep well, and are a mistake in other respects, unless wanted for exhibition purposes. Instead of thinning to nearly or quite 15 inches asunder, those who are anxious to grow the most serviceable class of roots should leave the plants 9 inches apart. Some of the thinnings may be dibbled out where there are blanks, this being done more for the sake of appearance than utility, as the roots thus obtained are usually much forked.

**Turnips.**—Early sowings in the open failed badly, but those in frames succeeded admirably. Those who have been fortunate in obtaining a good plant should thin out the Early Milan and Early Munich rather lightly, leaving them say not more than 4 inches apart, and if drawing for use commences when the roots are not much larger than round Radishes the rest will soon attain a larger size. Snowball or other successional varieties do not thicken at the roots well if left closely together, and these, therefore, should be early thinned to about 9 inches

apart. Seeing that the variety last named and Veitch's Red Globe are much superior in point of quality to the early strap-leaved form it is these that ought now to be principally sown, a few short rows of Early Milan being included if a quick supply of roots are desired. Cool, moderately rich borders are the best positions for these sowings, the drills for the larger forms being drawn 15 inches apart. Slugs, flea, and such-like can be kept off by means of frequent dusting over with soot and lime.

**Spinach.**—If this must be had during July and August sow the seed thinly, in drills 1 foot asunder, on the coolest borders. The New Zealand Spinach is a fairly good substitute for the ordinary or true Spinach, and this revels in heat and sunshine. If plants have been raised singly in small pots, turn them out on to a warm border in succession to early Potatoes, disposing them not less than 3 feet apart each way. Seed may yet be sown in pinches where the plants are to grow eventually, leaving three to each patch. Where the tops are plentiful it is these that should be gathered and used as required.

**Tomatoes.**—The time has arrived for planting these out against sunny walls, fences, temporary wooden screens, or even in sunny quarters clear of wall shelter. In the three first instances the plants should be given good room, 12 inches apart answering for the compact growers, such as Conference, Challenger, Dwarf Champion, and Open Air; but Perfection, Sensation, and other vigorous forms should have another 3 inches. They may be either trained upright, or if the spaces between fruit trees are utilised, oblique training can be resorted to if need be. Give each plant the benefit of a good shovelful of fresh loam and manure, starvation treatment not being wise, though the other extreme is even more objectionable. See that the plants are in a moist state at the roots when turned out of the pots, and they ought not to become very dry for the next fortnight, the first bunch of flowers failing to set fruit when the old ball of soil and roots become dust dry before fresh roots have spread out into the fresh ground. Therefore plant deep enough to form a basin about the stems of the plants, and water every third or fourth day. Those planted quite in the open to be not less than 2 feet asunder each way, and these should be at once fastened to strong stakes.

#### PLANT HOUSES.

**Caladiums.**—Plants that it is intended to grow for conservatory or other forms of decoration in intermediate structures should be placed at once into larger pots. After the plants have started rooting freely in the new soil give them more air, so that firm sturdy growths will follow. Full sunshine may also be admitted to these plants. When grown under close, moist, and shady conditions their foliage falls directly the plants are placed in cooler and more airy quarters—in fact, they are practically useless for many forms of decoration.

**Achimenes.**—More cuttings may be inserted in 5-inch pots; these root quickly if placed in a moist shady position for a week or ten days, or in the propagating frame. The plants from which cuttings have been obtained should then be allowed to grow or to develop their tubers for another year. When once these are again fairly started into growth weak stimulants should be given them, or else they will grow weakly. Plants rooted some time ago and now in pots should be supported by four or five small stakes and one or two pieces of matting.

**Poinsettias.**—Do not keep plants growing in too close and warm a structure, or else they will draw up weakly and soon become leggy. They should occupy an intermediate temperature, and air should be given liberally when fine, which will result in sturdy growth. Young plants that need repotting ought to be attended to from time to time, and the soil should be pressed firmly into the pots; loose potting is a great mistake and only encourages soft rapid growth. These plants do well in fibry loam, one-seventh of manure and sand.

**Euphorbias.**—Cuttings of *E. jacquinæfolia* should now be plentiful, and will root freely if they have been prepared by thorough hardening in a cool airy house for the last fortnight. The young shoots should be taken off just where they are emitted from the old stem with a sharp knife, and if inserted in sandy soil and covered with a bell-glass, shaded from the sun, and kept in a close warm house, the majority will root. If the cuttings have been produced in brisk heat and are then inserted nearly every one will fail. Once sufficient young stock has been raised the old plants, if needed, may be cut back and allowed to start from the base.

**Asparagus plumosus nanus.**—Large or fair sized plants that display a tendency to form crowns may be divided into small pieces. The plants soon become established and are useful for various decorative purposes. Cuttings of *A. plumosus* and *tenuissimus* root freely. If portions of the stem with a leaf attached are inserted in sandy soil, in small pots, and stood under handlights in a warm house, every one will root, and by winter make useful decorative plants in small pots. Where larger plants are needed repot those that have become too large in 4 and 5-inch pots.

**Crotons.**—Good heads that were taken off some time ago and are well established in 5 and 6-inch pots may be placed into larger before they become unduly crowded with roots; give each plant room to develop itself so that they do not become one-sided. Side shoots may now be taken from stock plants and rooted; these root freely in handlights in heat, if shaded from the sun, and will make good plants for many forms of decoration by autumn. Narrow-leaved kinds are very useful in a small state for table decoration, and these may be rooted in quantity, and when placed into 4 or 5-inch pots should be grown on a



shelf close to the glass. Plants that it is necessary to retain for stock may, when the cuttings have been removed, be cut close back and allowed to start from the base.

**Dracænas.**—Young plants should be repotted as they need more root room. Those plants that it is necessary to grow into a larger size, and which are now in 5 and 6-inch pots, should be placed into larger as soon as they are ready. These plants should be shaded for a few hours during the brightest and hottest part of the day, or else their foliage will colour too highly.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### THE APIARY.

THE weather is now showery and unsettled. Swarming is general, and as there is never honey during rainy weather both swarms and stocks will require attention in feeding. Stores of honey in stock hives will not prevent brood drawing at this season. The coming six weeks is the honey season from the Clover, and to make the most of it the bee-keeper must be careful to preserve the brood of the hive that will produce the honey-gathering bees during that eventful time.

#### SEALED QUILTS.

These are becoming fashionable and giving fanciers something to write about. These quilts are an American idea or rather bungle. A lady beginning bee-keeping last autumn had the top of a purchased hive sent to her covered with enamelled cloth. Although an entire novice in bee-keeping, and had not then seen the *Journal of Horticulture*, she saw the mistake, and writes to me, "I pricked holes in it with a pin." She did well, but would have done better had she removed it altogether and put in its place some porous non-conducting material and over that several inches dried grass.

#### DRONE BREEDERS.

There is scarcely a bee-keeper of my acquaintance who has not had a drone-breeding queen. Embrace the first opportunity now to raise nuclei for next year's work. We do not know what the weather may be further on, and "prepare early" should be the bee-keeper's watchword.

#### ENLARGING HIVES.

In all cases where the hives are not of a size sufficient for the laying powers of the queen steps should be taken to enlarge those too small, as previously advised. Another thing of importance wherever supers are used is that these should be made from the whitest of wood; bees have an inclination to make their combs of a similar colour to its surroundings. Some bee-keepers use the same supers for years, and as the bees soon darken the cleanest super, that with the accumulation of colour from years' use renders the honeycomb the reverse of appetising. Where the honey is used by the bee-keeper, if he is satisfied with used cases or supers nobody has a right to interfere, but in all cases where it has to go into the hands of strangers the clean super is the one that gives the most satisfaction and highest price. Cleanness and quality are the two cardinal points in bee-keeping, both as regards honey and wax.

After these comes quantity, if of the first standard, which is obtained in the highest degree without the extractor, honey ripener, spreading brood, reversible frames, excluder zinc, and as many more minor manipulations. During the past fifty years, and I believe for long before, with the exception of what comb foundation has done for us in assisting the bees greatly, there has been neither any improvement in the quality of the honey nor in its quantity from single hives. Doubtless bee literature has spread knowledge, but has not improved the quality nor the yield. Our large straw hives and Stewarton were then as they are yet, the foremost in the field. We have heard of great harvests being taken through the use of the extractor, but when the evidence came from a trustworthy source the yield did not exceed that of other well-managed hives in similar situations; but, as I have often said, that contests or competitions with bees and hives are futile unless the competition is conducted precisely under the same circumstances as to time and place.—A LANARKSHIRE BEE-KEEPER.

#### TRADE CATALOGUES RECEIVED.

T. S. Ware, Hale Farm Nurseries, Tottenham.—*Dahlias and Begonias*.

Kelway & Sons, Langport, Somerset.—*Plants, Trees, Seeds, &c.*

W. Clibran & Son, Oldfield Nurseries, Altrincham, Manchester.—*Store and Greenhouse Plants, Florists' Flowers, &c.*



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Vine Leaves Scorched** (F. J.).—The Vine leaf is very badly scorched. It arises from inattention to early ventilation, the sun being allowed to heat the tissue whilst covered or gorged with moisture. This is prevented by admitting air as soon as the sun acts on the house, the ventilation inducing steady evaporation, and the leaves then become warmed proportionately with the surrounding air.

**Thinning Potato Growths** (E. F. D.).—We have no doubt at all that two or three strong stems from a set give a better yield than would thrice that number of weak growths. The latter produce a greater number of tubers, but small in comparison with the others. When clusters of small stems have pushed from a set we have often thinned them with advantage to the crop, leaving only two or three of the stronger, drawing out the weaker when an inch or two above ground, or when hoeing between the rows the first time as soon as the plants were fairly visible. If you have doubts as to the usefulness of thinning, they will perhaps be dispelled by a well-conducted experiment. What we consider superfluous growths are as easily drawn out as if they were weeds; indeed, we consider them as such, as they deprive the soil of fertility without giving an adequate return. When thinning of the growths is resorted to it cannot be done too soon, late action not being nearly so effectual, and it may be of little or no service. The fault then rests with the individual, though it may not perhaps be easy to convince him of the fact.

**Leading Shoots of Vines** (A Learner).—These being intended to form rods should be trained not less than 2 feet apart for the small growers such as Frontignans; 2 feet 6 inches for moderate, such as Black Hamburgs; and 3 feet for strong growers like Gros Colman, on the extension system, but on the rod system they must be the usual distance asunder—1 foot more than just named. They may be trained their full length, the laterals pinched at every joint, and at the winter pruning the canes should be shortened according to their vigour, the weak the most, and the strong the least. By full length is meant the amount of space at command, the leader not being stopped until it has reached the limit. Some persons, however, stop the canes at about 9 feet of growth, pinch the laterals at the first leaf, and the sub-laterals to one leaf as produced, shortening weak canes to 3 feet, moderately strong to 4½ feet, and strong to 6 feet. Last year's canes should have the side shoots left 15 to 18 inches apart on opposite sides of the rods, alternately, stopping them at one or two joints beyond the show of fruit on the sixth to eighth good leaf and the laterals pinched to one leaf. A leader should be continued from the extremities of the rod, and be treated as before advised. The shoots from the spur will require disbudding, leaving one to each spur, stopping that retained a few joints beyond the fruit, and keeping the laterals stopped according to the space, not allowing them to become crowded. Every leaf should have full exposure to light and air.

**Trapa bicornis** (T. W. E., Leeds).—The above is the name of the plant to which your sketch refers. We cannot do better than repeat what we said about this plant last year. *Trapa bicornis* is a Chinese water plant, introduced into this country in 1790. The name *Trapa* is an abridgment of *calcitrapa*, the Latin name of a dangerous instrument called caltrops, furnished with four spines, which was formerly used in war to impede the progress of cavalry. *T. natans* is a curious aquatic with long brown and green roots and floating leaves, with petioles inflated into a tumour, as in the marine *Algæ*. The seed is larger than the kernel of the Filbert, with two cotyledons, one large and the other very small, and not increasing in size during the germination. Hence Gärtner considers this plant like the *Nelumbium*, as in a sort of middle state between the *Monocotyledonæ* and *Dicotyledonæ*. The nuts are farinaceous, and are esteemed as nourishing and pectoral. The skin with the spines being removed, there is a white sweet kernel within, somewhat like a Chestnut. They are sold in the market at Venice under the name of Jesuit's Nuts. They are also much eaten in Switzerland and the south of France. Some of the canals at Versailles are covered with the plant; and Niell informs us (*Hort. Tour.*) that the nuts are sometimes served up like Chestnuts. Pliny says that the Thracians made them into bread; and Thunberg states that the seeds of *Trapa bicornis* are commonly put into broth in Japan. In this country the



plant is generally kept in a cistern in the stove, and so treated was fruited by A. B. Lambert, Esq., in 1815, and specimens of the fruit sent to the Horticultural Society. *T. bicornis* is cultivated by the Chinese in marshes, and the nuts are used as food.

**Scented-leaved Pelargoniums** (*C. H.*).—You are right; the scented-leaved Pelargoniums are serviceable for decorative purposes. The following note, written by a gardener who grows them well, will exactly answer your questions:—Plants propagated now will remain useful until this time next year, or longer if desired. Young plants generally furnish the best shoots and finest developed leaves, but the plants may be kept on for several years and never fail to supply large numbers of side shoots. In beginning to propagate them the little side shoots should be taken with a small piece of the old wood attached, and this should form the heel of the cutting. They may be inserted singly into small thumb pots, or a number of them may be kept round the edge of a 6-inch pot. Any sandy soil will do for propagating, but they are benefitted by the help of a gentle bottom heat, and they should always have this if it can be supplied. We prefer putting the cuttings singly in the smallest pots, and then shifting them without breaking the young roots. This is the quickest way of obtaining large plants, as no check is given in repotting. As soon as a number of roots have been formed the cuttings should be withdrawn from the influence of the bottom heat and be placed in an intermediate temperature. Here they will soon grow rapidly, and may be repotted; 3-inch or 4-inch pots are large enough for the plants during their early days. They are placed in them from the cutting pots, and remain there until they have become bushy little plants. They are then shifted into 6-inch pots, and it is in this size that they become useful. At this potting good loam, a quantity of bone manure, and a liberal dash of sand should form the rooting mixture, and they will do admirably in this and in the 6-inch pots until they are a year old, but they must not be kept in a hot place constantly, as they luxuriate in a cool temperature. A sudden change from a hot place to a cold one should never be allowed, but after the first potting they should be gradually withdrawn from the heat, until by the end of May they are placed in a cool frame. There they may remain all summer, cutting from them as may be necessary, and pinching the points out of each of the leading shoots to induce a number of smaller ones to be emitted. They will soon come, and should be encouraged to grow for winter cutting. In the autumn, or by the end of September, the whole of the plants should be transferred to the greenhouse or conservatory, where they will be safe from frost and have the benefit of a genial atmosphere.

**Oxalis cernua** (*F. C.*).—This is an old plant, having been introduced from the Cape of Good Hope in 1767. It is of comparatively easy culture, and requires the following treatment:—After blooming the plants should be exposed in a sunny corner out of doors, water being gradually withheld. By degrees the leaves will assume a yellow tint, and finally fall off; and in this condition the pots containing the bulbs should be placed aside and kept perfectly dry until the season arrives for repotting them. If the ball of earth be then examined, a strong fibre may be traced from the surface-bulb quite to the bottom of the pot, and usually terminated by a cluster of young bulbs, each of the size of a nut. A pot planted originally with three bulbs will often contain, after flowering, a dozen or more full-sized roots, so that abundant facilities are offered for its propagation. At the base of the old bulb, which perishes, and also upon the short stipe proceeding from it, small offsets are often produced; but they are too minute to be available for the ready increase of the plant. At the end of September, about which time the roots will begin to grow, they may be repotted in sandy loam, with a little peat or leaf mould, planting them, if large, singly in a 4-inch pot about an inch below the surface; but it is preferable to place from three to five or six bulbs in one of rather larger diameter, a good drainage of potsherds or fragments of charcoal being indispensable. If the weather is mild the pots may remain in a warm nook out of doors, due precaution being taken to protect the plants from those pests of the gardener—slugs, snails, and worms; but on the approach of frosts they should be removed either to a cold frame, or, in the absence of this, to a cool window of south aspect, where plenty of air can be admitted in mild weather. A dry hot atmosphere is injurious to the plant; it should, therefore, be grown at a comparatively low temperature, and be removed to the sitting-room only when about to flower. If potted at the period named it usually begins to blossom about the end of March; but this depends in some degree on the temperature in which it has been kept. If the roots were preserved in a dry state until January or February, we think it highly probable that they might be planted in the open borders with the protection of a handlight, and would then flower in May and June, but without this covering it would be imprudent to risk the bulbs. The treatment of all the winter and spring-flowering species may be assimilated to that of the *O. cernua*.

**Preserving Fruit** (*St. Julien*).—We told you on page 381 that further inquiry should be made into the matter. It was made, and the result you will find, if you have not already done so, on page 410. However desirous we are to oblige correspondents we could not stop the press last week for the insertion of the article, which could not be prepared and sent sooner. It will probably not tell you all you want to know. No one has a right to expect to be taught everything on paper in a few weeks, and there are some things which cannot be learned from books alone; swimming is one of them, and preserving fruits and vegetables another. We are not prepared to say that the boiling for any particular period is absolutely necessary in the case of bottled fruit, but believe it to be most advisable. Why not test the matter for yourself, and then give the fruit-preserving fraternity the

benefit of your experience? You will most probably find that the fruit gently boiled for the period of time in each case, as given on the page cited, will be the plumpest, juiciest, and therefore superior, even if it does not keep any better than that which was only just brought to the boil, with a view of driving out the air from the bottles. If you will consult an expert pastry cook you will learn that parboiled fruit is the best for pies, as in this case the baking can be done quickly—the pastry, not the fruit, only being studied, and it is then light and wholesome accordingly. That, then, is a very good reason why bottled fruit should be boiled longer than you seem to think needful. With regard to the time that different kinds of fruit should be boiled during the process of being made into jam, we cannot advise other than in general terms. Everything depends upon the state and quality of the fruit, some requiring to be boiled very much longer than others owing to the extra "sloppy" or watery state of the samples to be treated. It must be boiled long enough to get rid of the superfluous water it contains, the best part of an hour being not too much in many cases. If it is boiled long enough for it to set, or prove fairly consistent when tested with a flat stick, there will be no difficulty about the preserve keeping. Those who have much preserving to do cannot wait for all fruit to be dry when gathered, nor is this at all imperative, although thought to be so by many housekeepers. There is no such thing as a precise time test in jam factories. The prices you obtain for produce, whether high or low, do not affect the general averages. More will be said on this subject, but all cannot be said at once, and there is not much gained, as a rule, by impatience.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*T. S., Grantully*).—We have received your letter, but the box referred to had not arrived when our pages were made up for press. (*T. F. S.*).—No. 1 spray from the Public Gardens, Bournemouth is *Cerasus scrotina*, the American Bird Cherry. No. 2, *Cerasus padus*, English Bird Cherry.

#### COVENT GARDEN MARKET.—MAY 24TH.

THE holidays as usual stopping business no quotations can be made.

##### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, half sieve .. ..	1	0	to	3	Lemons, case .. ..	10	0	to	15
" Tasmanian, per case ..	6	0	12	0	Oranges, per 100 .. ..	4	0	9	0
" Nova Scotia, per ..					Peaches, per doz. .. ..	6	0	13	0
barrel .. ..	12	0	17	0	St. Michael Pines, each ..	2	0	5	0
Grapes per lb. .. ..	1	6	3	0	Strawberries, per lb. ..	1	6	3	6

##### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle ..	1	6	to	4	Mustard and Cress, punnet	0	2	to	0
Beans, Kidney, per lb. ..	0	6	1	0	Onions, bunch .. ..	0	3	0	5
Beet, Red, dozen .. ..	1	0	0	0	Parsley, dozen bunches ..	2	0	3	0
Carrots, bunch .. ..	0	4	0	0	Parsnips, dozen .. ..	1	0	0	0
Cauliflowers, dozen .. ..	2	0	3	0	Potatoes, per cwt. .. ..	2	0	5	0
Celery, bundle .. ..	1	0	1	3	Salsify, bundle .. ..	1	0	1	6
Coleworts, dozen bunches ..	2	0	4	0	Scorzonera, bundle .. ..	1	6	0	0
Cucumbers, dozen .. ..	2	6	4	0	Seakale, per basket .. ..	1	3	1	6
Endive, dozen .. ..	1	3	1	6	Shallots, per lb. .. ..	0	3	0	0
Herbs, bunch .. ..	0	3	0	0	Spinach, bushel .. ..	3	0	3	6
Leeks, bunch .. ..	0	2	0	0	Tomatoes, per lb. .. ..	0	6	1	6
Lettuce, dozen .. ..	0	9	1	0	Turnips, bunch .. ..	0	3	0	4
Mushrooms, punnet .. ..	0	9	1	0					

#### AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	to	3	Myosotis, dozen bunches ..	1	6	to	3
Azalea, dozen sprays .. ..	0	6	0	9	Narciss, var., French, dozen				
Bluebells, dozen bunches ..	0	6	1	0	bunches .. ..	1	0	4	0
Bouvardias, bunch .. ..	0	6	1	0	Orchids, per dozen blooms	3	0	12	6
Carnations, 12 blooms ..	1	0	3	0	Pelargoniums, 12 bunches	6	0	9	0
Eucharis, dozen .. ..	3	0	4	0	Pelargoniums, scarlet, doz.				
Gardenias, per dozen .. ..	1	0	3	0	bunches .. ..	4	0	6	0
Iris, various, doz. bunches	6	0	12	0	Primula (double) 12 sprays	0	9	1	0
Lilac, white, French, per					Pyrethrum, dozen bunches	2	0	6	0
bunch .. ..	3	0	5	0	Roses (French), per doz. ..	0	6	2	0
Lilium candidum, dozen					" (indoor), dozen .. ..	0	9	2	0
blooms .. ..	0	6	1	0	" Red, per doz. blooms ..	1	6	3	0
Lilium longiflorum 12					" Tea, white, dozen .. ..	1	0	2	0
blooms .. ..	2	0	3	0	" Yellow, dozen .. ..	2	0	4	0
Lily of Valley, doz. bunches	3	0	6	0	Spiraea, dozen bunches ..	3	0	6	0
Maidenhair Fern, dozen					Taberose, 12 blooms .. ..	0	6	1	0
bunches .. ..	4	0	6	0	Violets (English), dozen				
Marguerites, 12 bunches ..	2	0	4	0	bunches .. ..	1	0	1	6
Mignonette, 12 bunches ..	3	0	6	0	Wallflowers, doz. bunches	2	0	4	0

##### PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to	12	Ivy Geraniums .. ..	6	0	to	9
Arum Lilies, per dozen ..	8	0	12	0	Lilium Harrissi, per dozen	13	0	30	0
Aspidistra, per dozen ..	18	0	36	0	Lobelia, per doz. .. ..	5	0	8	0
Aspidistra, specimen plant	5	0	10	6	Lycopodiums, per dozen ..	3	0	4	0
Azalea, per dozen .. ..	24	0	30	0	Marguerite Daisy, dozen ..	6	0	12	0
Calceolaria, per dozen ..	5	0	8	0	Mignonette, per doz. .. ..	6	0	9	0
Cineraria, per dozen .. ..	6	0	9	0	Musk, per dozen .. ..	3	0	6	0
Dracæna terminalis, dozen	18	0	42	0	Myrtles, dozen .. ..	6	0	9	0
" viridis, dozen .. ..	9	0	24	0	Nasturtiums, per dozen ..	4	0	6	0
Ericas, various .. ..	1	0	0	0	Palms, in var., each .. ..	1	0	15	0
Euonymus, var., dozen ..	6	0	18	0	" (specimens) .. ..	21	0	63	0
Evergreens, in var., dozen	6	0	24	0	Pelargoniums, per dozen ..	9	0	18	0
Ferns, in variety, dozen ..	4	0	18	0	" scarlet, per dozen .. ..	4	0	6	0
Ferns (small), per hundred	0	0	8	0	Petunia, per dozen .. ..	6	0	9	0
Ficus elastica, each .. ..	1	6	7	6	" single, in boxes .. ..	1	6	3	0
Foliage plants var., each ..	2	0	10	0	Saxifrage .. ..	12	0	18	0
Fuchsia, per dozen .. ..	6	0	12	0	Spiræa, per dozen .. ..	6	0	12	0
Genista, per dozen .. ..	6	0	12	0					

Bedding plants in variety.





### PROVISION FOR WINTER.

NEVER before have we seen pastures so bare in the third week of May as they were this year. On our journey from London to Chesterfield bare pasture was visible beyond the borders of Middlesex, right through Hertfordshire, Bedfordshire, Northamptonshire, and that part of Leicestershire south of Leicester. Some exceptions there were, but they were few and far between, pasture generally having very little herbage, some being quite brown and bare; Clover only a few inches in height was in bloom, spring corn was a thin weak plant, and much of the Wheat plant was unsatisfactory. The outlook for hay is therefore very bad indeed, much of the grass reserved for hay having been turned to for bare sustenance for the half-starved sheep and cattle. This has been done too in the northern part of Leicestershire, and in Derbyshire, where the herbage is altogether greener and more abundant. Quite refreshing was it to come upon really green fields and move a few miles beyond Leicester on the low-lying alluvial land through which run the Soar and the Trent.

As we write this article in Derbyshire, on May 17th, some fine rain is falling, and the barometer indicates more rain. If it comes now freely and quickly there may yet be some hay, but we have entered the eleventh week of persistent drought, and matters have become so serious that a special effort is called for in making provision of food for our live stock next winter. Judging from the enormous quantities of cattle Cabbage plants which we have seen at railway stations recently, efforts in this direction are being made. On every farm where land can be had Cabbage, Thousand-headed Kale, mixed corn and pulse for silage, Tares, mixed seeds, and roots should be sown or planted in the best way possible. Crops full and abundant are wanted, and must be had; with the rain which we may now expect to have seed germination and plant growth is certain to be quick; how vigorous it may also be depends upon fertility of soil. This ought not to be a doubtful matter at all; we have ample data for our guidance now in manure application, and if we err at all it should be in using too much rather than too little of quick-acting fertilisers when we sow or plant.

Take for example Turnips. We know that an average crop of 17 tons per acre absorbs about 150 lbs. of potash, 120 lbs. of nitrogen, 75 lbs. of lime, and 34 lbs. of phosphoric acid. Here surely is sufficient data to base calculations upon for the feeding of an ordinary or an extraordinary crop? It is only the farmer who has cultivated his land long enough to be intimately acquainted with its condition that can apply this plant food in the form of chemical salts with anything like precision. Even he must allow a liberal margin for contingencies, while anyone ignorant of how the land has been cultivated must make himself safe by using plenty of each manurial constituent. This would be working in the dark, but it would be safe enough. The all-important point is plenty of large sound roots for storage, plenty of small roots for leaving out or only covering slightly with soil. Practice, with science, will do this, but we must have both in happy combination with energetic action, born of the feeling that winter food there must be.

Let us be up and doing, then, striving to the very utmost of our powers to meet and overcome the difficulties of a season which, alas! has brought ruin in its train to many a struggling farmer, trained in a school where custom and habit were unfortunately the guiding principles. The season is altogether an exceptional

one, and exceptional means must be adopted to meet and overcome its difficulties. We must adapt ourselves to circumstances, not only now but always, and not rest content with simply drifting along. Well will it be if the difficulties of such an unkind season act as an incentive to face and overcome existing conditions generally. British agriculture has come to be regarded as a declining industry. Why has it failed to adapt itself to the state of the times? Is it because the British farmer is so badly educated in a technical sense? It has been said so, and probably with some degree of truth, but it is not that alone, it is also the lack of capacity to grasp the situation and to make a really judicious change. The laying down of entire farms to pasture is a mistake for which the farmer has paid dear. In such a season as this he is powerless to help himself by making any such provision for winter as we have indicated, all his dependance is in his pasture; if that fails him his difficulties may well appear insuperable.

### WORK ON THE HOME FARM.

The rain has come in time to render a crop of hay still quite possible, but the quick strong growth we require will only come on really rich pasture. Whenever there is a doubt of this, 1 cwt. or so per acre of nitrate of soda dissolved and brought quickly into action by the rain would do great good, but it must be used promptly and with the rain. The soil is so warm that growth will now be very brisk, and every effort must be made to thin-out Mangold, Swedes, Cabbage, and Kale as the plants become large enough. Weeds will certainly be troublesome, and both horse and hand hoes must be kept going as the weeds appear. Have all hand-hoeing done by the acre, and see that it is well done. Sow Maize now as we have recently advised, and any of the other green crops mentioned in our farm article this week. White Mustard sown now may prove very useful for sheep folding later on. Any bare fallow that could be well cleaned during the drought might be turned to account in this way, and the land would certainly be all the better for having the sheep upon it.

If possible, before grass mowing begins a rough outlying meadow will be pared, in order to get the sods dry enough for burning. This could not be done sooner, because the drought made the surface so hard that paring was impossible. The burning will be done at once if it can be managed, so as to destroy insect pests; the ashes will then be spread over the surface, and the ploughing be done at any convenient time before autumn. This field is wanted for green crops, and it will be sown with Oats for next season. It is, of course, optional to plough-in the turf without burning, but we much prefer to burn turf when it can be managed. This rough pasture has long been a nuisance with its coarse sedge-like herbage. It was a moot point whether to take it for Lucerne or for mixed cropping. Never has Lucerne been more useful than it has this season. It seems positively to revel in a drought, for while Grass and Clover near it are stunted in growth, it has continued growing in full vigour, affording a most valuable supply of sound green fodder.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

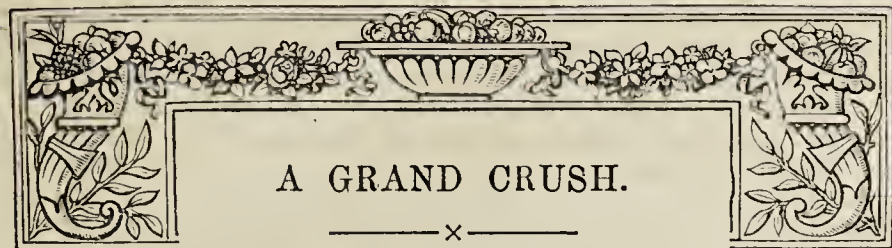
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1893.  May.	Barometer at 32°, and Sea Level.	Hygrometer.		Dirrec- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- pcrateure.		Radiation Temperature		
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	
Sunday .. 14	30.090	56.3	57.8	N.E.	59.0	74.9	48.1	107.7	46.2	—
Monday .. 15	29.874	68.1	59.2	N.E.	58.8	78.4	50.9	121.9	42.9	—
Tuesday .. 16	29.857	59.4	54.7	N.E.	59.0	71.7	52.9	111.0	51.3	0.065
Wednesday .. 17	29.630	57.9	56.1	E.	59.2	68.3	50.5	87.1	45.1	0.343
Thursday .. 18	29.617	59.7	56.9	S.E.	57.3	68.9	49.4	116.2	45.0	0.046
Friday .. 19	29.690	57.9	55.0	S.	57.0	66.9	51.6	113.0	46.0	0.010
Saturday .. 20	29.706	57.0	54.1	S.W.	57.1	68.4	53.1	114.7	48.1	0.028
	29.780	59.5	55.5		58.2	71.1	50.9	110.2	46.4	0.495

### REMARKS.

14th.—Overcast early; bright sunshine from 9.30 A.M.  
15th.—Sunny, but shining through cirrus or cirro-cumulus in morning; overcast afternoon, spots of rain in evening.  
16th.—Overcast almost throughout, with a shower from 1 to 1.30 P.M., but gleams of sun between 2 and 3 P.M.  
17th.—Overcast almost all day; thunder at 1.12 P.M., with slight shower; heavy rain with thunder and lightning at 4.15 P.M.; showers in evening.  
18th.—Overcast morning, with spots of rain at 10.30 A.M.; generally sunny after 0.30 P.M.  
19th.—Generally overcast and showery till 11 A.M.; much bright sunshine after.  
20th.—Dull and overcast, with slight rain at 9 A.M.; sun bright at 9.15 A.M.; shower at 12 noon; sun and rain up to 1 P.M., and cloud and sun after.  
The seventeenth warm week; but happily the drought has been broken after lasting as a "partial drought" seventy-eight days, a period very rarely equalled, certainly not since observations were begun here in 1857.—G. J. SYMONS.





IF the character of the Royal Horticultural Society's Show that was held in the Temple Gardens on the Thames Embankment last week can be better condensed than in the above words we shall be glad to have the amendment for publication. It must be clearly understood that we desire to register what we believe to be a fact, and in no sense to suggest a reproach. On the contrary, we think the crush was more in the nature of a triumph, and for the Benchers of the Temple who granted the site, as well as the officials who conducted the Show, we have nothing but praise to record, the first for a kind act, the second for assiduous endeavour to turn to the best account they could the privilege accorded.

The Show was undoubtedly a magnificent one. The more it was examined the larger and richer it appeared to be; but it was a magnificent Show, marred, obscured, and in a sense spoiled by the crushing and crowding both of plants and people. The former could not be seen to anything like the best advantage, and the latter could not see with any satisfactory degree of comfort. The Royal Horticultural Society was represented in brilliant guise, but all the same in fetters.

The magnitude of the Show could not be appreciated in the cribbed, cabined, and confined space allotted, and the full beauty of the exhibits could not be half displayed. True, the tents were not small, No. 1 we believe measured 170×32 feet; No. 2, 150×40 feet; No. 3, 160×60 feet, and No. 4, 150×32 feet, or a ground area of 25,840 square feet. Surely someone may be inclined to say that such provision must have been ample. But it was not, and 50,000 square feet would not have been an inch too much to have enabled the Society to do justice to the material at its disposal, and to have permitted the public to enjoy the great floral feast.

We do not know whether there was space for any material extension of tents, or, if there were, whether the authorities would have permitted the extension. The Benchers are proud of their fine lawn, as well they may be of such a verdant expanse in the heart of London, and Mr. Newton certainly deserves praise for keeping it so fresh and bright during a season when most lawns are brown instead of green. He has evidently had plenty of water at hand and used it wisely. But assuming that the covered area could be doubled, and the plants and flowers displayed in picturesque freedom, with adequate space for their inspection, we are satisfied that a display of flowers could be provided in London that could not be excelled in any city in Europe, and equalled in few. It was essentially a "flower" show, and not an assemblage of lofty Palms, Ferns, and luxurious masses of foliage. More of these, with adequate space, would have been a relief—a foil to the great banks of Orchids, packed in such profusion as to be almost overpowering in their beauty. Some relief there was, undoubtedly, in the excellent specimen foliage plants from the gardens of Mr. Crowley, Waddon House, and Mr. Warren, Handcross Park, as well as in nurserymen's groups, yet these did not materially either lighten or subdue the great dense flat masses of flowers arranged as if for market.

The overcrowding was a mistake, and if the tent room could

not be increased a much better effect would have been produced and a more meritorious display provided by a diminution of the exhibits. There appeared to be a rivalry in endeavour to produce the greatest masses rather than the best examples of culture of the respective kinds, and the removal of a considerable number from some of the consignments would have enhanced the value of those remaining—the choicest and the best. It is a question if this massing method of showing is not being somewhat overdone, and it is becoming more and more impressed on the public that the Shows of the Royal Horticultural Society have grown into trade marts mainly. With three or four splendid exceptions—notably the incomparable Orchid groups of Baron Schröder and Sir Trevor Lawrence—comparatively little rivalry in cultivation was to be seen among amateurs; while gardeners, as a body, show no disposition to send examples of their skill to the Exhibitions. In this respect—and it goes to the root of the object for which exhibitions were instituted—there is a great departure from the shows of past times, when keen competition was the order of the day, and in which the greatest number of cultivators were encouraged to share. The Royal Horticultural Society's Shows incite rivalry no doubt, but it is practically trade rivalry and a question of covering the most space by packing plants together, not as affording lessons in tasteful arrangement or striking individual specimens, but of making a great display of produce for sale. In many instances this is certainly not done artistically, though some of the mixed groups were pleasing, effective, and suggestive; in these the representations of alpine plants in rockery mounds probably bore the palm, and they would have gladdened the heart of Mr. Arnott.

Next to the Orchids, hardy border flowers were most in evidence. The number was enormous, but most of the groups distinctly overcrowded. Tuberous Begonias were gorgeous, and if any person had prognosticated such massive and symmetrical blooms twenty years ago he would have been regarded as a dreamy enthusiast. The march onward in these flowers has been in advance of imagination. Gloxinias, Streptocarpuses, Roses, Pansies, Calceolarias, Petunias, decorative and "Improved Raspail" Pelargoniums were effective in blocks, in some instances relieved with Ferns or otherwise pleasingly disposed; and the group of Nectarine trees from Sawbridgeworth "took" immensely with the visitors.

It was a great, varied, and particularly a crushed and un-picturesque Show. A gentleman who came direct from the chief Parisian Show of the season—who, in fact, saw both Shows on the same day, was asked for his impressions. In numbers, richness, and value of plants the Temple Show he described as overwhelming, but for taste in arrangement and picturesqueness it sank very low in comparison, and with the Paris Show fresh in his mind he could only regard the one at the Temple as a great show spoiled by cramming. Crammed, indeed it was, with plants and visitors. The 170 feet long entrance tent was wedged with people panting in the heat and longing to "get out of it," and many who did so did not hesitate to say they had "had enough show" and passed to the lawn and the music. The central table in the entrance tent should never have been there, but it was inevitable for accommodating the exhibits, and the crowds had to push through as best they could without seeing half of them.

Twice the room was needed for the produce to be fully displayed and fully enjoyed. Neither was the case; the Show, we repeat, was a grand crush, and in that respect a great success. It ought to be so, and we hope it is, financially; but there were loud grumblings among exhibitors about the conditions attached to tickets, and visitors who wished to purchase plants also complained freely because there were no attendants with collections to take orders. The labour in connection with the Show was immense, and the zeal of the officials beyond praise.



## PRACTICAL HINTS ON MELON CULTURE.

*(Continued from page 309.)*

THAT large numbers of Melons may be grown in unheated pits during the summer months is fully demonstrated by a few skilful and energetic cultivators, who annually produce many fine examples entirely without artificial heat. Others there are who often try to do so, but unfortunately fail in their endeavours, and at length give up the task. This is to be regretted, because in almost any garden there are a few spare pits which may with advantage be devoted to Melon culture during a period through which they are of little use for other purposes.

Having had a large amount of experience in this phase of Melon culture, in some instances with marked success, I venture to jot down a few simple cultural details which, I trust, will help to bring success where failure has been too frequent. Pits which have been cleared of early Potatoes are often devoted to Melon culture. With these but little preparation is required before planting, as ample drainage is provided by the fermenting materials employed for the previous crop. Three inches of the surface soil should then be removed, and a mound of Melon soil (prepared in the way advised on page 267) placed in the centre of each light, the top of the mound to be slightly flattened when completed, and about 9 inches from the glass. A bushel of soil to an ordinary frame light is enough to start the plants in. When preparing pits or frames which have been used for protecting plants, it is better to provide some kind of drainage rather than place the soil upon the hard bottom. Three inches of clinkers or broken bricks answers the purpose well, over which a layer of rough manure or leaves should be placed before the soil is added. If, on the other hand, the floor of the pit is formed of rough boards with a hollow cavity underneath, the soil may be placed directly on the boards.

I always like to put out young plants from 4 or 5-inch pots before they have become root-bound, so that they have time to thoroughly establish themselves before the fruit begins to swell. The usual precaution of setting the collar of each plant only just deep enough to cover the old ball with fresh soil must of course be observed. After planting give a good watering with tepid water, keep close, and shade for ten days. Two plants should be planted in the centre of each light, and a few days after that operation is performed remove the point from each. Retain a couple of the strongest shoots resulting therefrom on each plant. Train one to the front and the other to the back of the light, stopping each shoot when they are within a foot of the side of the pit. Plenty of laterals will then be produced. These ought to have the points removed at one joint beyond the pistillate flower. Should the weather prove bright and warm the lights may be entirely removed for an hour during the middle of the day, to enable the pollen to become thoroughly dry.

After each fully expanded pistillate flower has been fertilised the lights ought to be placed on again, leaving an inch or two of air (according to the weather) on the back of the pit for a couple of hours longer, when they may be closed, without damping, taking care to admit air by seven o'clock the following morning if the weather is bright or warm. By following this practice I have never experienced any difficulty in securing a good set of fruit, and of retaining four of the most even ones on each plant. Every alternate lateral produced generally requires removal to prevent overcrowding; this is best done after the fruits are set, as there is then a better chance of securing even fruits in consequence of having more to select from. As a rule Melons in pits are managed successfully enough up to this stage of their growth, but by the time the fruits are half grown and the plants begin to feel the strain of the crop red spider, canker, and gum frequently begin to work sad havoc among them; but I have no hesitation in saying that with proper attention to watering, syringing, and ventilation these diseases and insects may generally be prevented doing much damage.

Care should be taken to ascertain the true condition of the soil before water is applied to the roots. This is easily done by thrusting a pointed stick into the soil. If this is found to be moderately dry a couple of inches below the surface a good watering may be given, but if once the plants are overwatered previous to a wet day, canker or decay at the collar is almost sure to follow. Watering is best performed early in the morning to allow the superfluous moisture to dry up before nightfall, an occasional supply of liquid manure being of great benefit.

Unremitting attention to ventilation is perhaps more conducive to success than any other operation connected with the culture of Melons in pits. It is not so much the giving of air which is sometimes neglected as the reduction of it. Seeing that the sun is the only heating medium we have to depend upon, it is absolutely necessary that a good amount of it be entrapped as often as possible. During bright weather a chink of air should be given at 7 A.M., a

little more being added an hour after, the amount being gradually increased as the sun gains power, and during dull periods it ought to be correspondingly reduced. Strict attention must be paid to this matter during the middle of the day, for it frequently happens that the sky becomes clouded then, and the sun fails to make its appearance again the same day, and unless the lights are quite closed at such times too little heat is maintained through the night. During bright weather closing should take place from 2 to 3 P.M., giving the plants a good syringing at the same time. Should the weather become suddenly dull at closing time, indications of rain being also present, syringing should be withheld and given early the next morning if bright weather is apparent, for in order to keep red spider at bay atmospheric moisture must be freely indulged in whenever bright weather is prevalent; but on the other hand stagnant moisture lying about the plants during dull weather when no fire heat can be given to dispel it, is productive of almost all the ills to which Melons are susceptible.

When the fruits begin to colour syringing must be sparingly indulged in, wetting those leaves only which can be done without damping the fruits, keeping the plants also rather drier at the roots, and shading slightly in hot weather. By the time the fruits are fully coloured water should be entirely withheld, and a little air be constantly left on. The ripening process is best completed by placing the fruits on a dry shelf for a couple of days. Diseases and insects I hope to deal with shortly.—LABOR OMNIA VINCIT.

## SHOWING AND JUDGING ALPINE FLOWERS.

WHILE it is evident that alpine flowers have not yet attained their proper position in the estimation of the public, it is equally evident that slowly but surely they are becoming more appreciated. This being so, it is to be expected that their claims for recognition at flower shows will be attended to, and classes for these attractive flowers more generally provided. It may therefore be assumed that the question of how alpins should be exhibited and judged is of sufficient interest to warrant the initiation of its discussion, and, with the view of eliciting an expression of opinion, these remarks are penned.

It must be evident to all who have at heart the progress of alpins that the general method of exhibiting these in pots or pans fully exposed to view is a most unsatisfactory mode of showing their beauties. The glaring colour of the earthenware is manifestly incongruous, and has besides, in many cases, the great disadvantage of "killing" the colours of the flowers. Then, again, pots or pans, while obnoxious on the ground of their colour and obvious want of harmony with the character of the vast majority of the plants they contain, are still more unsuitable for the many trailing plants which form such delightful objects when seen hanging over a large stone or depending from some crevice in larger rock gardens. Their beauty cannot be fully displayed by allowing them to hang over the edges of a pot, and in order to give them full justice some other method must be adopted. Two systems which may commend themselves to some only require to be mentioned to be almost "laughed out of court." These are either to surround the pot with one of those wire frames which are the horror of those who dislike to see flowers, in themselves of most beautiful pendant habit, tortured into the shape of a pancake that they may (save the mark!) display their beauty; or to reverse the order of Nature and train the plant to an upright trellis. Both of these systems condemn themselves, and we must endeavour to find another.

Much may be said in favour of the pots being placed in a bank of moss with sufficient space between to allow of room for the trailing plants to extend their branches, but, on the other hand, the very beauty of the moss would in some cases prevent the flowers fully displaying their delicacy and loveliness. We must, therefore, I submit, take a lesson from Nature, and adopt the plan which has already commended itself to a few exhibitors of arranging the plants among pieces of rock so placed as to hide the pots or pans, and to display the form, habit, and colour of the flowers as well as possible. To do this properly the pieces of rock should be weather-worn and coloured, and perhaps no stone is so suitable as that which seems to be the favourite of so many gems of the alpine flora—limestone.

Another question which arises, and which is one of very considerable difficulty is, What is an alpine? Here, I must confess, I am puzzled to give a definition which would fully convey my meaning, and which would properly discriminate between a hardy border flower and an alpine, for some true alpins will grow admirably on many borders, and no hard and fast rule can be laid down. At the same time it is evident that many comparatively gross growing flowers are shown in classes for alpins, and there is a danger that these may, by their more showy appearance, be considered



more worthy of an award than others which come more properly under the category of alpine, and although less showy would commend themselves to a connoisseur—a word I do not care for in this connection, but which expresses better than any other my meaning.

Now the consideration of these remarks leads me to what is I think a natural conclusion, *i.e.*, that the conditions on the exhibition schedules must be so expressed as to guide both judges and exhibitors in their work. May I thus submit for consideration and amendment, in a similar way as we had recently done in the discussion on the showing of hardy border flowers, the following? "Best — pots or pans of alpine flowers of neat and dwarf habit; to be arranged in a natural and artistic manner." I do not consider this absolutely perfect, but submit it for the freest criticism and comment.

I now come to what is perhaps the most delicate portion of my subject, inasmuch as it may be held to imply a meaning which I do not intend to convey. I refer to the appointment of judges for alpine flowers. It is evident to all devoted growers of herbaceous border flowers—where there is less chance of making a mistake than with alpine—that in many districts profound dissatisfaction exists with regard to the awards in connection with these flowers. Let me carefully guard myself by saying that I refer to no district in particular, nor do I single out any show; but I know that this statement will be approved by many who, like myself, have "no axe to grind." The truth is that horticulture has, like everything else, become specialised, and it is too much to expect that our judges should be all-round men, who have a critical knowledge of every branch of floriculture, not to speak of horticulture; yet this is what is expected of judges, and they are often called upon to give awards in classes which would require experts. How many of our judges—honourable, intelligent, and highly competent men as most of them are—have the technical knowledge required to enable them to judge a class of alpine? How many are so intimate with alpine that they can tell whether some are well or ill-grown, and how many know a rare plant or one excessively difficult to grow?

No one would expect a hardy plantsman to be a qualified man to judge at a Rose or a Chrysanthemum show, nor *vice versa*, is it reasonable to expect a man other than a specialist to judge alpine (which are far more difficult to judge than border flowers). It is true we have such men, but where we have one such *rara avis* we have twenty or thirty others who, if you speak to them, make no secret of the fact that they would much prefer that such classes should not be submitted to them but handed over to someone who has special knowledge of the plants.

I have stated my case in as temperate a manner as possible, and can only express a hope that in any correspondence which follows we may have a full and free expression of opinion which may lead to some practical end.—S. ARNOTT.

#### MR. WILLIAM HENRY PROTHEROE.

WE are privileged by the courtesy of the comparatively new weekly paper *London*, which is making its way in the City and surroundings, to publish the excellent portrait of a gentleman who is widely known and respected in the horticultural world, and to make the following extract concerning him.

"Of the many thousands who, on business or pleasure intent, crowd hourly along that busy City thoroughfare, Cheapside, how few are aware that, down a quiet passage, about midway between 'Sir John's' clock and the top of Queen Street, they can, almost every day of the year if so disposed, regale their organs of sight and smell with the lovely forms and exquisite fragrance of those weird yet beautiful tropical products known as Orchids. Here, day after day, only a few steps from one of the busiest and most bustling streets of the Metropolis, is to be found a veritable Temple of Flora, glowing with Nature's most brilliant colours, and fragrant with her choicest perfumes, having for its high priest the very pleasant personality whose form and features are depicted on this page. It is concerning this floral hierarch, known among his fellow citizens and throughout the horticultural world as William Henry Protheroe, that we purpose telling the readers of *London* somewhat to-day. Mr. W. H. Protheroe is an instance of hereditary predilections, for his father was the originator of that special combination of aptitudes of which the product is the horticultural auctioneer.

"After passing through a course of private tuition, the classic portion of which enabled him to articulate with fluency and ease those polysyllabic appellations with which the scientific botanist delights 'to paint the Lily and add a perfume to the Violet,' the younger Protheroe was, at the age of sixteen, sent to complete his technical education at the Government Horticultural College at Ghent. Thence, after a lapse of three years, he returned to his native soil, bringing with him his diploma and the highest honours his foreign *alma mater* could bestow.

"Shortly after his return he took the first step in the career which

he has since so successfully pursued, commencing with a six-days sale of nursery stock at Chester, and upon the retirement of his father, after forty years of active business life, he founded, in conjunction with Mr. G. Morris, one of his present partners, the now well-known firm of Protheroe & Morris. Very soon the necessity of obtaining spacious premises for the daily exhibition and sale of horticultural produce became pressing, and ultimately, some ten years ago, the firm settled down in the commodious quarters at Nos. 67 and 68, Cheapside, which they now occupy. This occupation was inaugurated by a sale of imported Orchids, the result proving that the success of the new experiment was assured. Next followed the institution of Dutch bulb sales, which have become so popular that the extraordinary quantity of an average of 15 tons per week passed under the hammer during last season, with the certain prospect that even this record will be beaten later on.

"As before mentioned, Orchids are sold here all the year round, and, inasmuch as the imported Orchid on its arrival is far from being a thing of beauty, presenting to the uneducated eye a decided similarity to a partly decayed Cabbage stalk, it very wisely occurred to Mr. Protheroe to introduce at his sales, by way of object lessons, a number of these plants in the full glory of their bloom, thereby giving to the uninitiated a practical illustration of the remarkable types of beauty that could be obtained from such apparently unpromising



FIG. 77.—MR. WILLIAM HENRY PROTHEROE.

materials. By this happy thought many persons who otherwise would probably never have turned their attention to the subject, became interested, made purchases, and are now the proud possessors of valuable collections.

"One feature which cannot fail to strike the visitor for the first time to one of these sales is the quiet conversational tone which prevails and the evident feeling of thorough good understanding which exists between the auctioneer and his company. Questions are freely asked and courteously answered, opinions mooted and views exchanged with an utter absence of the conventional 'rostrum' style, and with pronounced advantage to such intending purchasers as do not happen to be possessed of any considerable stock of special knowledge. Mr. Protheroe, who is always willing to enlighten inquiring minds, recently expressed an opinion that although there is a falling off in the price of the commoner class of Orchids, fine varieties and rare hybrids would find as eager buyers to-day as formerly. In reply to a further query he stated that the highest prices obtained at any sale ever held was at Downside, Leatherhead, when Mr. William Lee sold off his fine collection in 1887. The first two days' sale contained exactly 500 plants, and the amount realised was £6000, the highest price obtained for a single plant being £326 10s. for a *Cypripedium Stonei platytanum*, which had been purchased two years previously for £60, and which Mr. Protheroe thinks would now bring over £500 if offered for sale. Mr. Protheroe confines himself exclusively to the horticultural branch of the business, leaving to his four partners the land agency and other important departments.

"Being still on the right side of fifty, with plenty of health and energy, the subject of this sketch is likely to be heard of for many years to come in connection with his favourite pursuit."





#### ONCIDIUM LONGIPES.

THIS is a pretty little species of neat growth. The short flower spike is produced from the top of the advancing growth, and bears three or four flowers. The sepals and petals are brown tipped with yellow, the crest and labellum very prominent, bright yellow with occasionally a dark blotch. It should be grown in shallow pots or pans, and kept well up to the light in the Cattleya house.

#### ODONTOGLOSSUM REICHENHEIMI.

This species appears to be getting more common in collections, and is very easily grown. In habit it resembles *Oncidium tigrinum*. The flower spike is erect, branching, and bears a profusion of flowers, which last a long while in perfection. The sepals and petals are recurved, keeled, dark brown, spotted and barred with yellow or greenish white, and sometimes tipped with pure white. The labellum is bright rose, fading to nearly white at the edge. It requires plenty of water while growing and should be kept in the coolest house.

#### DENDROBIUMS.

There are few Orchids which give greater pleasure in return for the trouble bestowed on their culture than Dendrobiums, and as the most beautiful species in the genus are also cheap, it is no wonder they are so popular. The colours range from pure white through many shades of yellow, pink, and purple, and the size and shape of the flowers show considerable variation. Dendrobiums may be divided into three sections—viz, 1, Deciduous, or those which flower on the bare well-ripened bulbs of the previous year's growth; 2, Evergreen, which retain their foliage year by year and flower in the same manner as the deciduous species; and 3, a number of species, such as *D. bigibbum*, *D. Cambridgeanum*, *D. chrysanthum*, which flower on the current year's growth, generally in the autumn months.

Nearly all Dendrobiums require a strong heat with plenty of sunlight and atmospheric moisture while growing, the object being to get the growths finished while there is plenty of sun to ripen them. Strong growing species, such as *D. thyrsiflorum* and *D. speciosum* among the evergreen kinds, and *D. Wardianum*, *D. Pierardi*, and *D. macrophyllum* among those that are deciduous, are greatly benefited by a fortnight's exposure to the open air in August if the growths are "fully made up," this treatment thoroughly hardening and ripening the pseudo-bulbs and laying the foundation for a splendid show of bloom in spring. The deciduous species require little or no water after the leaves have fallen until they show signs of activity in the spring, and a minimum temperature of 40° to 45° is quite high enough for them during the winter months. The evergreen species should, however, be carefully watered all through the winter, and the bulbs must not be allowed to shrivel. The temperature for these ought never to fall below 50°, and if kept a few degrees higher so much the better, but anything approaching excitement must be avoided.

The roots of different species require consideration as to the description of compost best suited to their requirements. Those that are small and seem inclined to grow in a mass should have a little pot, and the compost used in a comparatively fine condition, while those with larger roots which seem more inclined to ramble will be better in slightly larger pots, the compost also being made rougher. Good peat fibre and sphagnum should form the basis of the compost, and the larger the roots the greater the proportion of moss. Good drainage is essential in all cases, and this is secured by filling the pots two-thirds full of crocks and keeping the plants well above the rims. The best time to pot the spring blooming kinds is directly the flowers are over, and the autumn flowering species when they commence to grow.—H. RICHARDS.

#### SHOW PANSIES AND THEIR EARLY HISTORY.

IN the *Journal* of the 25th inst. Mr. Alexander Sweet in his interesting communication is unintentionally misleading, and I think he cannot have seen Mr. James Simkins's book on "The Pansy and How to Grow It," published in 1889, in which are coloured illustrations of our Show Pansies of sixty years ago, and also the early history of the Show and Fancy Pansy written by me at Mr. Simkins's request. I should be sorry to take from Scotland the honour, claimed by Mr. Sweet, of its being a Scotchman who raised the first varieties from the old *Viola tricolor*,

but I am able to say with certainty who was the father (if I may so term it) of the Pansy, and to name the date of its first being taken in hand.

The following extract is from Mr. Simkins's book: "I have (writes an old florist under the signature of 'Dahl') been an amateur for more than fifty years, and can well remember the introduction of the Heartsease, which, though a native of Britain, was never cultivated in order to render it a florists' flower until taken in hand by Mr. Thompson, of Iwer, Bucks, and by him brought into cultivation, and from his original stock have all the beautiful varieties of this flower been produced." He wrote this in 1863.

Mr. Thompson was gardener to the late Lord Gambier, who resided at Iwer, near Uxbridge, and in 1813 or 1814 Lord Gambier brought him a few plants collected in the fields near his mansion. They were the yellow and white wild variety, and Lord Gambier requested him to cultivate these plants. Having done so it was soon discovered that a great improvement was effected. In three or four years many seedlings had been raised, and one which took Lord Gambier's fancy was named Lady Gambier, another George the IV., and a third was named Ajax. The first seedling which showed improved form was named Thompson's King, at that time the only marking about the eye of the improved forms were a few dark lines.

In Harrison's "Floricultural Cabinet," published about 1830 or so, for I have not the volume at hand to refer to, the names of about seventy-five varieties are given, all raised in England, and in a later catalogue of the year 1844 102 varieties are named, raised by the then famous growers, Widnal of Cambridge, Brown of Slough, Thompson, and others, all of English origin excepting three varieties raised by the late Mr. Handasyde of Musselburgh, and these seem to be the first varieties sent out from Scotland. I knew Mr. Thompson and Mr. Handasyde also, and about this period (1840 and onwards) Messrs. Mountjoy of Ealing, Bragg of Slough, Hale of Uxbridge, and others were raising fine improved forms. I must refer those who wish for further information to my paper on the Early History of the Pansy in Mr. Simkins's book. I was anxious that my knowledge as one of the oldest Pansy growers still living should be recorded for the rising generation, and such a record had not been hitherto written.

The late Mr. Charles Turner of Slough was for many years a most successful exhibitor and grower, and sent out many of the very fine varieties raised by Hall and others, and very old Pansy men still have pleasant memories of the superb batches sent out by Mr. Turner in 1854 and 1856, consisting of Admiral Napier, Constellation, Crimson Perfection, Perfection, Sir Walter Scott, Monarch, Emperor, and that grand variety "Charles Turner." What an impetus these varieties gave to the Pansy! I was at that period travelling for the late Mr. Charles Turner, and my orders in Scotland for them were very heavy. About the year 1854 the firm of Messrs. Syme & Middlemas of Glasgow sent out a beautiful refined dark self named Rebecca, and Messrs. Downie and Laird sent out Duchess of Wellington. Amongst the foremost trade growers of these flowers in those days were Messrs. Downie & Laird, Dicksons & Co., Handasyde, Dicksons and Sons, Austin & McAslan, Paton & Small, White & Sinclair, Paul of Paisley, and many others whom I knew, and the Pansy was then so well taken in hand by the amateurs as well as trade growers as to make it the national flower of Scotland.

Our Scottish friends have a more congenial climate for the Pansy than the Southrons, and the late Mr. C. Turner had to give up the Pansy because it gave him up. The southern heat and dryness tells terribly upon these plants, and it is in consequence of this and not from any lack of interest in the Pansy that so few fine varieties are sent out from the South, and the cultivation of the Show section is indeed small.

What an interesting history of the veterans who have passed away could have been written such as that penned by Mr. Sweet in your last issue, and would be most welcome reading to our younger florists. At our recent Midland Counties Pansy Society's Exhibition at Tamworth there was a hearty shaking of hands with old Scottish friends, Lister, Campbell, Irvin, and Smelling, who brought many superb blooms. Other older growers were there and a host of younger men who have their hearts in their work. Truly the Pansy and its lovely sister the bedding Violas are now in the ascendant, and may they long continue so. To some of us the days of further enjoyment of them are short, and we leave as a legacy to them a continuation of our work and our hearty good wishes.—WILLIAM DEAN, *Sparkhill, Birmingham*.

#### FLOWERING TREES AND SHRUBS.

ARE the claims of flowering trees and shrubs to recognition sufficiently admitted by owners of gardens and pleasure grounds? Are the different kinds so well known and so generally planted as is desirable? It is doubtful if affirmative answers can be given to these questions; yet it will be difficult for anyone to deny that at no time are pleasure grounds more beautiful than when the following and other kinds of trees and shrubs are flowering in them.

**EXOCHORDA GRANDIFLORA.**—How seldom do we find this hardy deciduous flowering shrub in private gardens, and yet it is one of the most handsome of all that belongs to this section of spring blooming plants. By some it is called *Spiraea grandiflora*, or Pearl Bush. It is a native of North China. Its culture is very easy, growing freely in any ordinary garden soil, and in that which is retentive it specially revels.



The only point about its culture that is absolutely necessary is that a position exposed to the sun must be chosen, so that the wood will become matured. It is from the previous year's shoots that its pure white blossoms are produced in elegantly formed racemes.

**PERSIAN LILACS.**—For freedom in flowering and a graceful appearance when in bloom the Persian Lilac is to be recommended. The peculiar shade of colour, too, is always appreciated, and as a shrubby plant this *Syringa* should receive more attention than it now has from planters, as variety is thus added. The perfume, however, is not nearly so pleasing as that from the more common *S. vulgaris* and its white form.

**LONICERA TATARICA.**—This, the Tartarian Honeysuckle, introduced as far back as 1752, is annually one of the most free-flowering deciduous shrubs we have, and still it is far from being common. As to soil or situation, it is not at all particular. We have a large bush growing in a western aspect, and not too far away from overhanging trees, still its rose-coloured buds and blush-white expanded blossoms are freely produced.—E. M.

**THE JUDAS TREE** (*Cercis siliquastrum*).—How rarely do we see this quaint-looking shrub in gardens! The curious manner in which the blossoms thrust themselves, as it were, out of the bark of the branches, large or small, renders it a distinct novelty. In spring it is smothered with its purple blossoms, and makes quite a brave show amongst other things in the shrubbery. Later on its foliage, when fully developed, is most pleasing.

**THE SIBERIAN CRAB** (*Pyrus Malus baccata*).—We have a very fine specimen of this *Pyrus* standing on the lawn; its lower boughs sweep the grass beneath. Nothing in the whole garden is more highly prized than this tree when in flower or laden with its golden-coloured fruit in the autumn. Perhaps the tree is in its brightest dress when half of the blooms are expanded, the remainder in bud; the rosy tint of the latter gives variety and a charming contrast to the fully expanded blooms, which are pure white. It is necessary to keep a sharp look out for the bullfinches in the early spring; they are very partial to the buds the moment the latter show signs of vitality. It is hardly necessary to say that if the birds are allowed to have their own way for a few days the beauty of the tree and the crop of fruit are much depreciated.

**GENISTA PRÆCOX.**—This is deserving of much more attention than it receives in the shrubbery or indeed elsewhere in many gardens. For freedom of flower and gracefulness of habit I know of no more attractive shrub for flowering in April. Planted so that its branches can hang over the edge of a pond, and if among rocks so much the better, seems to be the most suitable site for this Broom. The only objectionable point at all is the disagreeable odour emitted from its flowers; especially is this noticeable in a room if by chance any should be cut.

**THE SCOTCH LABURNUM** (*Cytisus alpinus*).—No one I think can dispute the superiority of this variety over all other trees when seen in open places. The chain-like blooms of this variety are of greater length than any other, and the foliage is more profuse and of a deeper tint of green, setting off the rich yellow of the flowers so much better I think than the common kind, which is rightly characterised as "all bloom."

**BERBERIS VULGARIS.**—Although this *Berberis* is looked upon as a common kind it is well worthy of a place where space can be found for its branches to grow in an all-round manner, when they assume that semi-weeping character which renders this species so striking an object, with its pale yellow blossoms depending from underneath the branches. Even the smallest twigs are heavily laden. We have it growing in an isolated position over a base of closely cut common Laurel; this latter provides quite a good contrast to the *Berberis*.

**SPIRÆA PRUNIFOLIA FL.-PL.**—This is one of the best of the shrubby members of this family, not only on account of the purity of its small rosette like blossoms, but for the length of time that they remain in a fresh condition upon the plant. This variety does not require the space that some do, being more compact, and of less vigour.—E. M.

### THE LARCH DISEASE.

LITTLE wonder this disease excites attention among planters, because it threatens the partial if not total extinction of the most profitable timber tree in Britain; not altogether because the trees become diseased and worthless, but also because landowners hesitate to plant it for fear of the disease. Larch timber gets scarcer every day, and in many localities there are now no saleable Larch and few young plantations.

The late Mr. Macgregor, forester to the Duke of Athole, in his examination by the Select Committee on Forestry a few years back, said the Larch "was not now growing in any place hardly in Scotland," and that there was nothing to come into competition with Larch if it would grow as it did eighty years ago. Since then, when on a visit to Mr. Macgregor at Dunkeld, he told me he believed late frosts to be the originating cause of the disease, and this leads me to ask if any of your readers have ever considered how much the Larch disease resembles "gumming" in the Peach tree, making allowance for the different habits of the two species. Gumming is as destructive as the Larch disease, and it is many years since Robert Thompson of Chiswick wrote

that when it pervaded a tree to any serious extent that tree was done for. Now we know pretty well what causes gumming. So far as I am aware it is never troublesome where the trees can ripen their wood well, as, for example, in a heated glass house; but outdoors, in a rich soil where the growths are rank and immature, and are cut hard back or wounded from any cause, gumming will appear. Gross growth affected by anything which seems to check the circulation is almost sure to be followed by gumming. But after all, the gum appears to be one of the constituents of the tree, and it is only its abnormal development which constitutes the disease. So in the Larch. Those ulcerated swellings on the stem look more like gummy or resinous eruptions than anything else. Authorities on the Pinaceæ—Senilis, for example—assert that the Larch in its native habitat, when in the best of health, shows symptoms of the disease "circulating through the entire system of the plant," and that the altered conditions of climate, situation, and culture develop the disease as seen in this country. The curious thing about it is that it is the younger plantations that suffer most, while old plantations escape almost entirely. How is it that climatic conditions affect the one and not the other? The soil theory will not do, because the disease is found on all soils.

Are there diseased strains of Larch? It would be interesting to trace the source of some diseased plantations. A few years ago I valued the woods on an estate in the North of England, and on one strip of bank on the river side a plantation of Larch about thirty-five years old was free from disease, and in a plantation on the same bank and soil, planted perhaps twenty years later, the trees were so badly diseased as to be almost worthless. One fact is pretty well established. As soon as home-grown Larch seed could be got it was preferred, and has been steadily recommended by growers (on what reasonable grounds I would like to discover), and since then the disease may be said to have originated and spread. I would never plant Larch from home-saved seed if I could get foreign, and my reason for this is the superior conditions of existing plantations on all sorts of situations, and which must have been produced from foreign seed.—J. S., W.

### DEATH OF MR. SAMUEL BARLOW.

WE regret to announce the death of Mr. Samuel Barlow of Stakehill, Castleton, near Rochdale, which took place on Sunday morning last at his residence at twenty minutes to eight o'clock. The following account of the career of the deceased gentleman, who was so widely known and respected in the floral world, has been sent to us, and it will be observed that the position he attained was the result of his perseverance, industry, and business aptitude.

Mr. Barlow was born in 1825, and received the rudiments of education, for the completion of which he was so much indebted to his own perseverance and natural love of study, at the village school of Woodhouses near to Daisy Nook. At an early age he commenced to work in the bleachworks of Messrs. Otho Hulme & Sons, Medlock Vale, his father being at that time manager. Working all day and spending his evenings at the night class of Woodhouses, the boy assiduously prepared himself for the busy and useful career which was in store for him. From Medlock Vale the family removed, at the end of 1839, to Salford, where Mr. Barlow's father had taken the place of manager of the bleaching department of the Adelphi Print Works, then in the occupation of Messrs. Gisborne & Wilson. Here Mr. Barlow's abilities began to display themselves to some purpose. Being sent into the colour making department at the Adelphi Works, and being apprenticed to that business, such was the natural taste he evinced for the work, that before the term of his apprenticeship had expired he had charge of the department, and was appointed foreman colour-maker and assistant manager, which position he held until the dissolution of the firm. In 1847 the father accepted the appointment of manager of the bleachworks at Stakehill, then occupied by Messrs. Heald, Wilson & Co., and the son, then being out of work, went with him to assist at the starting of the new management, intending to remain only until he found a suitable opportunity of pursuing his own employment. He soon found congenial employment, however, at Stakehill, which has ever since been his residence. On the death of his father in 1855 Mr. Barlow became sole manager of the works, which in the interval had been considerably extended.

In 1861 Messrs. Heald, Wilson, & Co. gave up business, and then Mr. Barlow, in conjunction with partners, became proprietor of Stakehill Bleachworks, the business of which has ever since been conducted under the style of Samuel Barlow & Co. The practical scientific knowledge and the ingenuity of the principal partner resulted in the introduction at Stakehill of certain improvements in the mechanical process, which proved so useful that the premises had to be considerably enlarged, with corresponding material advantages to the firm. In addition to his manifold business duties, Mr. Barlow took a great interest in public affairs, and was a Justice of the Peace and a County Alderman. Mr. Barlow at the time of his death was Mayor of Middleton. He was also a Director of the Winterbottom Book Cloth Company Limited, and a past President and existing Vice-President of the Manchester Arts Club. He was a great florist, and there can be no doubt that some of the greatest pleasures of his life were associated with horticulture. Mr. Barlow often acted as a judge at the shows connected with the Manchester Royal Botanical Society. His botanical knowledge was very considerable. He also possessed many amiable as well as business qualities, and was so much respected that the highest civic honours were conferred upon him by those among whom he lived, and who were, perhaps, the best able to judge of his worth.





**EVENTS OF THE WEEK.**—Horticultural events of special interest are not particularly numerous in the metropolis during the ensuing week. As mentioned below, the Committees of the Royal Horticultural Society will meet at the Drill Hall, James Street, S.W., on Tuesday, June 6th, and the first exhibition of the London Pansy Society will also be held on that day and at the same place.

— **THE WEATHER IN LONDON.**—Bright sunny days have prevailed during the past week. On Monday afternoon, however, occasional showers occurred, and during the night a refreshing rain fell. Tuesday was fine, and the same may be said of Wednesday, the weather appearing settled as we are going to press.

— **WEATHER IN THE NORTH.**—The weather has been cooler generally during the past week. Friday and Saturday last were two of the finest days we have had. Sunday was rather cold in the afternoon, and a good deal of rain fell during the night and on the forenoon of Monday. Tuesday morning was fine, rather cool, but sunny and pleasant. Lowest night temperature 43° during week.—B. D., *S. Perthshire*.

— **A ROSE SHOW AT EARL'S COURT.**—We are informed that arrangements have been made to hold a supplementary show of Roses at the Gardening and Forestry Exhibition, Earl's Court, on June 14th and 15th. Liberal prizes are offered, which should bring forth a keen competition in the seventeen classes provided.

— **ROYAL HORTICULTURAL SOCIETY.**—The next meeting of the Royal Horticultural Society will take place in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, June 6th. Besides the usual display of plants, flowers, fruits, &c., the members of the London Pansy and Violet Society will compete for prizes offered in the schedule. At three o'clock Sir John Llewelyn, Bart., will lecture on "Hardy Rhododendrons and Azaleas."

— **THE TEMPLE SHOW.**—As our pages are being prepared for the machine we receive the following official statement:—"There was no doubt as to the Royal Horticultural Society's Temple Show being a great success from an exhibition point of view, and it is an agreeable task to be able to record the fact that it was also a financial success. The receipts exceed those of any previous year, and this is remarkable, considering the great number of people who were 'out of town' on their Whitsun holidays, and that the Show had to stand on its own merits, without having had the advantage of a royal duke to perform the opening ceremony."

— **CAN PLANTS SEE?**—Darwin gave it as his opinion that some of them can, and according to the "Daily News" an Indian botanist relates some curious incidents which tend to verify the belief. Observing one morning that the tendrils of a *Convolvulus* on his verandah had decidedly leaned over towards his leg as he lay in an attitude of repose, he tried a series of experiments with a long pole, placing it in such a position that the leaves would have to turn away from the light in order to reach it. In every case he found that the tendrils set themselves visibly towards the pole, and in a few hours had twined themselves closely round it.

— **ELECTRIC LIGHT AND PLANT STRUCTURE.**—Mr. G. Bonnier has conducted some interesting experiments to ascertain how the structure of herbaceous plants is influenced by exposure to the electric light. He finds, according to the "Comptes Rendus," that direct electric light is prejudicial to the normal development of the tissues on account of its ultra-violet rays. Generally, when considerable development, accompanied by intensification of the green colouration, is caused by continuous electric light, in plants growing under glass shades that intercept excess of ultra-violet radiation, at first high differentiation occurs in the structure of the organs; but an intense light, prolonged unchanged for months, causes remarkable modifications of structure in the various tissues of such new organs as are capable of adapting themselves to the illumination. Less differentiation then takes place in these organs, though they are always rich in chlorophyll.

— **BOTANICAL APPOINTMENT.**—We understand that Dr. N. Wills has been appointed ordinary Professor of Botany at the University and Director of the Botanic Gardens at Christiana.

— **THE JAPANESE GARDEN** is said to be a decided feature at the World's Fair at Chicago. It is a complete miniature garden, with walks and bridges, and filled with the curiously trained plants for which Japan is noted.

— **"JOHNSON'S GARDENERS' DICTIONARY."**—The fourth part of the new edition of this well known dictionary has been issued. As in previous instalments the work is well done, and plants from *Feronia* to *Indigofera* are described.

— **RICHMOND HORTICULTURAL SOCIETY.**—The nineteenth annual summer Exhibition of this Society will be held in the Old Deer Park, Richmond, on Wednesday, June 28th. A liberal schedule has been prepared, and a good Show no doubt will result.

— **SCOTTISH POTATOES IN AMERICA.**—It is reported that large quantities of Scottish Potatoes are being shipped weekly from the Clyde to United States ports. Two steamers for New York recently took out 944 tons, which are valued at £3620.

— **BRISTOL AND WEST OF ENGLAND CARNATION SOCIETY.**—Mr. F. W. Baker, the Honorary Secretary of the new Society, referred to on page 416 last week, informs us that arrangements have been made to hold the first Show in the Clifton Zoological Gardens on the 19th of July. The High Sheriff of Bristol is President this year. Schedules, we are informed, will be out in a few days.

— **A CHILDREN'S FLORAL FÊTE.**—A Floral Fête for children will be held under the auspices of the Royal Botanic Society, at the Gardens, Regent's Park, on Wednesday, June 21st. Prizes are offered for single and double mail carts, goat chaises, tricycles, ponies, and sedan chairs decorated with flowers. Special prizes will also be given for groups of plants and flowers, Ferns, hanging baskets, and window boxes.

— **SMALL HOLDINGS NEAR LONDON.**—Under the auspices of the Small Holdings Committee of the London County Council, thirty-six plots have been let on the Millmeads, some low-lying land around the Abbey Mills Pumping Station, where forty-two further plots will shortly be ready for letting. Some land at Plumstead, Charlton, and Millwall will shortly be secured for the same purpose, and the Committee further propose to temporarily use portions of Hackney Marshes for allotments, at the same time raising the level of the marshes, which are at present subject to flooding.

— **FLOWERING SHRUBS AT LAMPORT HALL.**—I was very much interested in reading the account in your last issue (page 418) of the flowering shrubs at Lamport Hall. I can fully endorse Mr. McKinlay's statement respecting the same. I was for five years foreman in the Hall gardens and had good opportunities of observing the beautiful trees and shrubs which adorn the plantations. Certainly they are worth going a long distance to see. Visitors to Lamport should also inspect the rockery, where they will find objects of interest to repay them for the journey.—G. FREEMAN, *Akeley Wood House, Buckingham*.

— **EVOLUTION IN THE FLOWER.**—At a recent meeting of the Ealing Microscopical and Natural History Society, the Rev. G. Henslow presiding, Mr. J. N. Green, Professor of Botany of the Pharmaceutical Society, London, delivered a lecture on "Evolution in the Flower." The lecturer, described the structure of a typical flower, and dealt in an interesting manner with the processes under which fertilisation or pollination of certain flowers is effected by means of pollen involuntarily conveyed from one flower to another flower of the same species by insects (flies and bees) which visit the flowers for the purpose of extracting honey from them.

— **THE TREE LUPIN (*LUPINUS ABBOREUS*)** is at present very fine; a large plant of the yellow variety, over 6 feet high, having more than 100 spikes in bloom. The light yellow flowers are very pleasing at this period, and, as the plant continues in flower for a month or two, it is very acceptable from its distinct appearance. The lilac form is no less beautiful, but is less valuable where the varieties of *L. polyphyllus*, *L. nootkatensis*, or other blue kinds are grown. The yellow variety associates well also with the Delphiniums, which will be in flower before it is over. The Tree Lupins are short-lived generally, but grow readily from seed, and may be increased by cuttings in the summer.—S. ARNOTT.



## — FARNHAM AMATEUR ROSE AND HORTICULTURAL ASSOCIATION.

—This Show will be held on July 5th, when, besides other open prizes, a prize of £5 will be given for the best twenty-four Hybrid Perpetual Roses, open to all amateur and professional growers. Mr. Coldham C. Knight is the Honorary Secretary.

— DEATH OF MR. J. B. WEBSTER.—We regret to learn of the death of Mr. J. B. Webster, late forester to Her Majesty at Balmoral Castle, and for many years estate manager to Sir William Verner Churchill, Vernersbridge, Ireland. Mr. Webster was seventy-four years of age, and died recently at Glasgow.

— SHEFFIELD NATURALISTS' CLUB.—Under the auspices of this Club a lecture on the "Development of Leaves" was delivered recently in the Montgomery Hall by Mr. William White. The chair was taken by Mr. Howarth. The lecturer commenced by describing the different forms of leaves—round, triangular, arrow, and spear-shaped. He gave some interesting information regarding the progression of the development, and stated that some leaves which were almost round in their first stages became jagged in their ultimate forms.

— THE DEATH OF MRS. STEEL OF HEATHERSLAW.—Readers of the *Journal* will be familiar with Mr. George Steel's name as a writer in our columns on Violas, Pansies, and Hollyhocks, and will share our regret at the sudden death of Mrs. Steel on the 13th ult. at the early age of thirty-six. She was as enthusiastic as her husband in the raising of seedling Pansies and Violas, and Heatherslaw is becoming famous for the charming varieties, especially of the *Violetta* section of the latter. All florists will join in very sincere sympathy with Mr. Steel in his sad bereavement.

— A SAVAGE CORRESPONDENT.—It quite makes me savage when I read in the *Journal* of such good rains in various parts of the country. We have had scarcely any for three months. There is little grass and no haymaking about here. Strawberries will be almost a failure. Apples a fair crop, but falling. Pears short, so many having already fallen. Cherries only skins and stones. Plums very short, and the trees covered with insects.—J. W. L., *Erith*. [We trust *Erith* had a share of the welcome shower that fell around London on Monday night, and that our correspondent is now more docile in consequence.]

— THE ORDINARY QUAMASH (*Camassia esculenta*) is doing unusually well this year, the pleasing purple-blue flowers with yellow anthers being very plentifully produced on long spikes. Unfortunately it lasts in flower for a very short time, and if grown in a sunny position in light soil the flowers rapidly pass away. I thus find it better to grow it in a position where it only receives a little sun in the morning and where the soil is fairly moist. The white variety, *C. esculenta alba*, which I also grow here is very inferior to the type in general effect, the flowers being a dingy white, entirely wanting in purity.—S. ARNOTT.

— SUTTON'S EARLY GEM CARROT.—Mr. H. Dunkin, Warwick Castle, writes:—This is a splendid early variety for open-air culture. The roots come quickly to maturity, are tender, and of excellent quality. On March the 8th I sowed a dozen rows in a warm border, and on May the 10th began to pull young Carrots for use. Since that date enough for a good dish have been obtained daily. I have not tried this variety side by side with *Early Nantes*, but some of the latter sown ten days later than *Early Gem* are very much later, and do not promise to supply roots fit for use for at least another fortnight. The position they occupy, however, is not such a warm one. Perhaps other readers of the *Journal* who have tried the two varieties under precisely the same conditions will record their experience as to the comparative earliness of either.

— ROYAL BOTANIC SOCIETY.—The third and concluding lecture upon Ferns was given last week at the gardens by Professor J. W. Groves, F.L.S. On the previous Friday the lecturer had dealt with their formation and development, devoting the present one to a consideration of the points in common existing between Ferns and flowering plants, or, as he preferred to call it, between spore-bearing and seed-bearing plants. So far as the structure of roots, stems, and leaves were concerned, no true differences were found; it was only when we come to deal with the flower and seeds on the one hand, and the spore and its peculiar development on the other, that vital difference appeared. If, however, we took the spores of the Ferns as equivalent to the pollen grains of flowering plants, a correspondence in structure and functions was to be seen, and, with one or two exceptions, could be traced throughout their subsequent development.

— EARLY RIVERS NECTARINE.—Mr. T. F. Rivers has sent us ripe specimens of this new Nectarine. The quality of the fruit is equal to its fine appearance. Had it been named for indicating flavour it might not inappropriately have been called the Champagne Nectarine, so sprightly is its bountiful juice, and distinct and agreeable its aroma. *Early Rivers* is a beautiful Nectarine, not to be lost sight of by planters in and out doors.

— ARNICA MONTANA.—Referring to Mr. Divers' note (page 415) I fear this cannot usually be considered a long-lived plant. It has never been a success with me, which I attribute to the dryness of my soil and the want of moisture. The plant requires a rather peaty soil, and a plentiful supply of moisture. I cannot say that I have met with any good specimens anywhere, and for many years it has had the reputation of being a bad "doer" in cultivation.—S. ARNOTT.

— AN EDIBLE THISTLE.—In the search for improved vegetables, says "*Meehan's Monthly*," the Rocky Mountain Thistle should not be forgotten. It rolls up its young leaves after the fashion of a Cabbage Lettuce, and was food for Indians who, as Dr. Coues has determined, called it *Shanataque*. The writer of this paragraph has collected them in Colorado as large as small Cabbages. They ought to be as good as an Artichoke, which is the flower head of an ally of the Thistle. Dr. Gray named it *Cnicus edulis*.

— BAMBOOS AT KEW.—A new garden was made in the early part of 1892 in the wood near the Rhododendron Dell, and now accommodates an extensive collection of Bamboos. The place was in past times a gravel pit, and by the removal of many hundreds of loads of sand and gravel it has been considerably enlarged, and is now a pretty, sheltered hollow. It is intended eventually, says the "*Kew Guild Journal*," to concentrate here all the larger-growing hardy Monocotyledonous plants.

— THE HELIANTHEMUMS or SUN ROSES, writes Mr. S. Arnett, are very delightful at present, and it is a matter of surprise that they are so seldom seen. It is true the flowers are extremely fugacious, but then they are succeeded by others day after day for a considerable time, so that a good-sized bush is in the mornings of fine days covered with the small saucer-shaped flowers of various shades of pink, red, white, and yellow. The plants like a sunny position and a dry soil, but they should not be allowed to become too dry, as this would shorten the blooming period. They are very readily raised from seed, and a small packet will supply plants enough and to spare. Old plants do not remove satisfactorily. They are hardier than the *Rock Cistus* and flower earlier.

— A JUBILEE CELEBRATION.—On Saturday last the staff and some private friends of Messrs. Hurst & Son, the great wholesale seedsmen of Houndsditch, celebrated the jubilee of the foundation of the house in 1843. Upwards of a hundred of the former and a goodly number of the latter assembled at the Paddington Station of the Great Western Railway, where saloon carriages were provided to convey them to Slough, led by Mr. N. N. Sherwood, the head of the house. Arrived at Slough an ample lunch was provided for them at the Railway Hotel, and thereafter the whole party entered the breaks and carriages specially provided for their use, and proceeded according to their fancy, some for a drive to Virginia Water, others to view home farms or the garden. In the evening the whole party assembled at the hotel and sat down to a sumptuous dinner provided by the highly respected head of the establishment.

— THE KEW ARBORETUM.—According to the "*Journal of the Kew Guild*" the Arboretum continues to grow in extent and interest, and attracts considerable attention from horticulturists. In spite of the evil effects of London fog, the collection of Coniferae is now a very fine one and comprises many handsome specimens. Deciduous trees and shrubs are also becoming more and more interesting, and as the fogs and smoke of winter do not appreciably damage them, they are likely to become much more extensively used for gardens in the neighbourhood of large towns than they are now. The Curator, Mr. Nicholson, is preparing a catalogue of all the hardy ligneous plants cultivated at Kew, which will no doubt be published in some form so that all who are interested in trees and shrubs will be able to obtain it. This catalogue will reveal a wealth of material available for outdoor gardening of which few people have any idea. Anyone who has made a study of the collections grown outside at Kew will agree that in English gardening generally there is a want of variety among the trees and shrubs used which under the circumstances is deplorable.



— WHAT BECOMES OF THE APHIS IN THE WINTER?—Regarding this question Mr. T. A. Sharpe writes to *Nature* as follows:—"I have spent many weeks this spring closely observing the budding trees, with the object of discovering in what condition of life the aphis spends the winter; as the result of my observations, which were made under the microscope, I believe that the aphidæ during the autumn (or as many of them as have reached the state of reproduction) attach themselves to the stem of the tree, with their young inside them, in much the same way as the female members of the closely allied family coccidæ do. In course of time the mother aphis becomes simply a dried skin serving as a protection to the young. When the warm days of spring come these are developed and easily make their way through the skin and crawl on to the young leaves, there to begin their work of sucking and reproduction."

— PRIMULA SIEBOLDI.—It is only when one comes across plants grown to perfection that their useful and ornamental characteristics can be fully appreciated, and I have never as yet in the neighbourhood of Liverpool seen anything in the way of outdoor flowers to approach two beds of the above *Primula* growing in the garden of Mr. Andrew Lawson of Knowsley. From some small roots received a few years ago he has now two beds containing thousands of plants. The first planted is so full of bloom that not a leaf can be seen, but it was a bed planted early last October which I admired most, for there the pretty pale green leaves formed a striking contrast to the deep rose flowers with their white eyes. To see them at their best the plants must not be overcrowded, or the colour becomes monotonous. Much the finer spikes were to be seen on plants that had been transplanted. The ordinary garden soil mixed with road scrapings and decayed horse manure is the compost they seem to revel in. When the plants are peeping through the ground in the spring a top-dressing of the same soil is given, and they are secure for the summer.—R. P. R.

— WAKEFIELD PAXTON SOCIETY.—At the recent weekly meeting of the members of the above society, Mr. George Hudson, head gardener at Woolley Park, read a paper on "The Rhododendron," which he cultivates very extensively and most successfully. Mr. Hudson dealt with his subject in a thoroughly practical and deeply interesting manner, and his address was attentively listened to and warmly applauded. The essayist clearly explained how to grow the Rhododendron from seed, and said it likes a peaty and abhors a limestone soil, and he recommended growers to pick off the old seed vessels. An interesting discussion followed the reading of the essay, in which Messrs. Brown, W. Hudson, Wilson, and others took part. The room presented an exceedingly bright and most attractive appearance, there being tastefully arranged on the large tables an extensive and very beautiful and varied collection of blooms of the Rhododendron, Iris, Calceolarias, and several other varieties of flowers, all of which had been effectively arranged by Mr. W. Blackburn, the Curator, assisted by Mr. J. G. Brown. The flowers were subsequently disposed of and realised 9s. in aid of the Royal Gardeners' Orphan Fund.

— THE GREATEST RAINFALL IN TWENTY-FOUR HOURS.—In the *Journal of Horticulture* for May 4th, Mr. Clement Wragge of Brisbane, asserts that Queensland has beaten the world's record in the extraordinary amount recorded on February 3rd—viz., 35.7 inches. Commenting on this in *Nature* last week, Mr. E. Douglas Archibald says:—"I am sorry to have to take away such an unenviable palm from Queensland by recalling a fact well known to every Indian meteorologist, that the highest record extant belongs to Chirapunji in the Khasia hills, where on June 14th, 1876, 40.8 inches were recorded in the twenty-four hours. Not only so, but on the 12th 30 inches fell, and in the four days, from the 12th to the 15th inclusive, as much as 102 inches. Of course the effects were not so disastrous in this case, as indeed such a state of things is little removed from the normal at Chirapunji in the early part of June; but I have a very clear recollection of it as I was at Chirapunji on the 12th and 13th, and not far from it on the memorable 14th. The conditions which have occurred in Queensland and the North Island of New Zealand during the last six months have been a remarkable example of persistent abnormals, and though the total number of rational causes may still be wanting to explain everything, one or two were evidently in operation when I was there from October to January, and I am confident that from the empirical law of persistency, coupled with a few rational inferences, a forecast of impending floods could have been made and can be made for the future, much in the same way as the general character of the monsoon can be foretold in India."

— TESTING THE FERTILITY OF LAND.—According to a writer of many years ago, a person in buying a piece of ground for horticultural uses, dissolved a handful of earth from the land in question, in water. After leaving it to settle for several hours, if the water was tasteless the land was considered fit for use. Possibly these old fashioned people only know that some good came from this test, and they may have been laughed at as a set of agricultural "cranks," says "Meehan's Monthly." Since moderns have discovered that the fertility of a soil depends on its power to absorb and retain nutritive matter, the old-time practice is seen to have been a sensible one. The purity of water showed that the land had properly absorbed the fertilising material in the water. A blind man was once laughed at for going to select a farm. On being helped out of the vehicle, he asked that the horse might be led to a bunch of Thistles. He was told there were none. Then he remarked that Docks would do as well. This request they were able to gratify. He subsequently bought the farm. When asked the reason for his "cranky" desires, he replied that Thistles grew on poor land, Docks only on rich soil.

— ARAUCARIA IMBRICATA.—Every old Kewite will remember the large Chilean Pine which until last autumn stood on the lawn near the conservatory. For several years it had been rapidly deteriorating, every winter rendering it more gaunt and unsightly. Latterly, says the "Journal of the Kew Guild," it became too dilapidated to be even picturesque, and so far as the beauty of that part of the garden is concerned nothing was lost when, last autumn, its death necessitated its removal. One cannot help regretting it, however, as a tree of great interest; it was, in fact, an old Kewite with a romantic history. The story of its introduction to Kew is an "oft told tale," which has, moreover, lately gone the round of the daily press, so that the following few particulars of its origin will suffice. In 1792 Archibald Menzies, a navy surgeon and botanist, was dining with the Viceroy of Chili, when at dessert some nuts were brought to table which were quite unknown to him. Of these he kept a few, which he afterwards sowed in a box of soil; they germinated on board ship, and he finally succeeded in bringing five plants home to Kew, which were the first ever seen in this country. Of these, the specimen under notice was one, so that when it died it was exactly 100 years old. It seems to have been much damaged by being used at a fête at Carlton House during the Regency of George IV., hanging lamps having been attached to its branches.

#### NOTES ON THE BERBERIS.

It would be difficult to over-estimate the value of these beautiful hardy flowering shrubs, for they are most useful for outside decoration during the spring. They are extensively cultivated on the pleasure grounds here, and the produce a splendid display. The various species of *Berberis* are adapted for planting in large beds, isolated on the lawn, or placed in conspicuous positions in the foreground on shrubbery borders or in the wild garden. They also present a very striking appearance when placed at intervals along the carriage drives or woodland walks.

When planting *Berberis* it is essential not to place them in too close proximity with other shrubs, for if sufficient space is not allowed them to fully develop it is impossible to see them to advantage. These shrubs are not, as a rule, very fastidious as regards the nature of the soil, but I think a good stiff loamy soil is the most suitable. The soil here is of a very retentive nature, and I never remember seeing them succeed so well as they are doing, especially *B. Darwini* and *B. stenophylla*, every shoot and twig of which being completely covered with bloom.

The species above named are the best and most useful of the whole genus. Though equally desirable they are totally distinct in character, the former being of an upright or erect growing nature, whilst the latter is of a drooping or pendulous habit. *B. empetrifolia* is also a very useful species. This is of a dwarf growing nature, seldom attaining more than 1½ to 2 feet in height. It is adapted for planting on rock-work or in the alpine garden. *B. aquifolium* and *B. repens* are also extensively grown here, being especially valuable on account of their early flowering nature.—G. PARRANT, *Ashby Lodge Gardens, Rugby.*

#### A VISIT TO STUDLEY ROYAL.

A VISIT to Yorkshire and the baronial mansions it contains is always interesting historically, and to all horticulturists there is something instructive and worthy of record. Such was the case I had the pleasure of experiencing recently when I was present with the members of the South Shields and Westoe Burial Board, at the invitation of the Chairman, J. Muir Smith, Esq.

The place selected was Studley Royal, the country residence of the Marquis of Ripon. We first visited Fountains Abbey, which, perhaps, contains some of the finest forest trees in the northern counties, and for



effect as the true work of a landscape garden artist, many writers say, has no equal in this country. The lakes, cascades, and surprise views are most complete and *récherché* in their effectiveness in giving a dominant view of the salient points of the Abbey and the Cathedral at Ripon.

After enjoying these fine woods and woodland natural parterres a hurried visit took us to the gardens. These have recently been placed under the charge of Mr. Fred Kneller, and astonishing zeal and activity he has displayed in the six months he has been there. All the old Vines have been taken out, new ones planted, and new piping in all the vineries as well as new boilers, three of Green's Municipal Boilers and one vertical one have been employed. The kitchen gardens have also been remodelled and planted with fruit trees. This place will be worth a visit by-and-by when Mr. Kneller has had time to complete and mature all his plans for the practical and general beauty of the grounds.

In front of the mansion and adjoining the Italian garden there are some fine Coniferae—*Thuja borealis*, 40 feet, and a Silver Spruce, 75 feet high, supposed to be the finest in England. There are also a few *Cedrus atlantica*, 80 feet high, planted by the Princess of Wales about twenty-five years ago, and a young *Cedrus Deodara* in 1887 by Mr. W. E. Gladstone; in addition *Abies pinsapo* and *Cupressus Lawsoniana* are scattered about. The flower garden is a pure specimen of the Italian style.—BERNARD COWAN, F.R.H.S.

### AMERICAN ORCHARDING.

"AMERICAN GARDENING" for April contains the following trite remarks on the "growth" of a nurseryman into a large orchardist.

"Forty years and more ago T. C. Maxwell started a nursery upon six acres of land at Geneva, New York. Tree-growing was a new business in those days [in America], and even the few bold spirits who attempted it began cautiously. The little venture of young Maxwell prospered, and he soon associated with him an elder and a younger brother, Henry and Joshua, under the firm name of T. C. Maxwell and Brothers. The young firm soon gained a reputation for energy and reliability, and for thirty years it distributed an enormous quantity [for America] of fruit and ornamental trees throughout the country. But there finally arose a great competition in the nursery business, and prices fell, while the prices for good fruits were rising. Fruit-growing is the natural outcome of tree-growing, and the Maxwells, like scores of others in this interesting Western New York country, graduated from the nursery business into the fruit business. It is marvellous what a hold plant life and fruit culture obtain upon the nurseryman; he never outgrows his love of trees and flowers. And his training in the nursery makes him the most discerning and successful of fruit-raisers, and his influence extends far and wide.

"It is a universal practice in Western New York to raise fruit-tree stock upon new land—soil which has not grown nursery stock before. This arises from the fact that treed land produces short wood, because it is deficient in some of the immediate elements of tree growth; yet the fact that there are thousands of acres of successful orchards in this region upon old nursery lands is proof that the soil still contains sufficient fertility for profitable tree-growing. The excessive growth of nursery stock consumes much of the readily available plant food, but the more unavailable elements are still retained, and give themselves up slowly but continuously to the moderate demands of mature trees. The age of the nursery tree determines its market value, and the greater size must be attained in the given time, but the fruiting tree is measured by its performance rather than by its age. So it comes that soil which is no longer profitable for fruit-tree stock may still make the best of orchard lands."

In this we have an instance of the difference between American and English methods, and it affords the key to the success of the nursery, and points to the reason of the general failure of British orchards. The nursery grounds are broken up deeply, in many cases trenched, and the soil undergoes considerable knocking about and mixing to a good depth in the course of the succession of young trees. Thus the soil manufactures enough food for the young stock, and is left in the finest condition for manufacturing more—sufficient for trees planted at six to twelve times the distance apart. What has supported those number of trees will certainly be made fast enough and quite sufficient for one to get a good grip of the soil and produce fruit profitably at an early age, after which it is only a question of feeding in the right place, at the proper time, with the needful elements. That is why nursery land is suitable for an orchard. True, this system prevails in some instances in fruit plantations, and where it does there is little to choose between American and well-grown English fruit, as both are alike excellent, but the latter is more juicy, and as regards feeding value the better of the two.

But the idea that any description of soil is good enough for fruit trees, and any site suitable, is to build castles in the air, and perish in the effort. Breaking up scrub land, digging holes in poverty stricken soils, and sticking in fruit trees where nothing has grown well hitherto, is the way not to do it. Why cannot we supply the home market, and become exporters instead of importers? Land that has had no more done to it in the way of cultivation than loosening the surface with plough and harrow may grow the surface-rooting Currants, Gooseberries, and Plums, but it is only planting Apples, Cherries, and Pears in pan

soils to gum or canker to death. There are some soils naturally permeable to air and rain for the manufacture of a sufficient supply of the mineral elements, and it is only then necessary to augment the natural resources by artificial supplies, with nitrogenous elements for the essential growth, according to the exigencies of the season and the demands of the crops.

The Maxwells commenced twenty-five years ago with fifty acres set with "Baldwins, Greenings, Spitzenburgs, Red Canadian, and other standard kinds. . . . Twenty-five acres more are devoted to Apple orchards in other places, making a total of seventy-five acres. All these orchards are regularly pruned and manured, and just as regularly sprayed with Paris green and Bordeaux mixture. Even last year, when the early season was exceptionally wet, good results were obtained from the spray, the freedom from leaf blight, and the small amount of scabby and wormy fruit. The largest crop which the fifty-acre orchard has produced is 9000 bushels."

The yield of the American orchard of fifty acres is at the rate of 36 bushels per tree at twenty-five years of age, if the trees are 24 feet apart, and "the trees are singularly uniform in size and shape, and they are ideal types of the high heads and round tops of the Western New York system of Apple-growing"—that is, they are standard trees, and so are the trees of the Northern United States and Canada that supply the choicest Apples to the British markets. In fact, the "setting out" of the lands acquired by the "pilgrim fathers" in America, and the colonists at the Antipodes has been on the same lines as that of their ancestors in England before the Roman invasion. But the orchards of England are a failure; 99 per cent. of those attached to farmsteads produce crab-like, scabby, and wormy fruit, with a singular irregularity in the size and an anomalous shape in the trees, models of what can be produced by fungal and insect pests, starvation, and neglect. Instead of proving, like the Apple orchards of America and the Antipodes, "a safe investment," they have not given a tithe of the results for which the owners have looked, and the reason is they have not been attended to in matters of pruning and cultivation and the keynote of successful practice and the incentive to maintain a place in the struggle for existence. This in a country the richest in soil and with a climate best calculated to produce the juiciest and finest Apples in the world. It is not the soil or the climate that prevent ours being an importing instead of an exporting country in the matter of hardy fruits; but it is in the cultivation—not keeping pace with the most important discoveries of modern horticulture, and striving to meet the requirements of the increased population with produce of a higher using value at a rate within reach, for, sentiment aside, the stomach rules the world, and instead of its being a question of force it is a matter of culture.

All growers of fruit for sale advocate few varieties to be planted. This is no doubt right from a certain standpoint. Half a dozen varieties of Apples noted for great productiveness and constant bearing may continue so for a time, but that will reach its limit, and then it will be found that certain varieties have lost the power to properly fertilise themselves, and they will then cease to bear full and regular crops. This already is the case in America and in the European vineyards—lessened vintages through degeneration, and consequent greater susceptibility to disease. There can be nothing of this where new varieties are constantly being introduced. Mr. Rivers has no difficulty in securing enormous crops of his Early Prolific Plum—it is a total failure in some soils. But is it a question of soil, or incapability of self-fertilisation? The planting in blocks acres of one variety must lead to absolute sterility, or the Darwinian conceptions are positively erroneous. But the trees verify all that Darwin has advanced, and much more; for a block of one variety so isolated as to be beyond the reach of fertilisation by insect agency with another variety, not only bears irregularly itself, but the progeny from it are marked by weak constitution. Therefore the block system may not be pushed to extremes, and the arrangement must be such that one variety will not be solely dependent on itself for fertilisation; but by cross-fertilisation by another variety its self-insufficiency will be overcome, and its crops be maintained at a high standard for abundance, regularity, and quality.

This important truth is well known to American orchardists. "It has been known for many years that some varieties of the native Plums are not self-fertile," says "American Gardening," "but it remained for M. B. Waite to apprehend that the same principle applies to many varieties of Apples and Pears as well, and that the reason for failure of fruit crops is evidently to be ascribed in many cases to planting too continuously of single varieties. . . . It was discovered as an incidental feature in experiments to determine if the Pear blight is communicated from flower to flower, and last year definite experiments were made upon a larger scale, which show conclusively that mixed planting is often necessary to the setting of full crops of fruit. This Maxwell Apple orchard was the scene of one of the most important of these experiments, and it has now, therefore, yielded a sufficient crop to pay for all its years of care—but the crop is knowledge, not Apples!" This is where the difference comes in between American and English methods, the first "have been a safe investment and a crop of knowledge," the latter has been marked by the uncertainty of the returns, and the still farther aggregation of prejudice.

There comes a trite saying—known everywhere but in England—from New Zealand, "The British public are so wedded to old notions that generally the rest of the world have adapted any new idea before they awake to its utility." See the *Journal of Horticulture*, May 11th, 1893, page 371. But I have no faith in so tender an Apple as the Northern Spy being a fit stock for Apples in this country. Most



New Zealand plants require a greenhouse or protection in England, and Northern Spy Apple is too tender on the Crab and the English Paradise stock to thrive generally in Britain. There is not anything to dread from American blight in this country, and to advise tender stocks is only another way to secure the supply of the British markets with imported instead of home-grown Apples. Mr. Palmer, of course, does not see this, and it would be well if the grower in this country would bring to bear the latent energy and the indomitable perseverance, so needful at the present time, to transform depression into prosperity. The elements are so abundant in the soil that the magic wand of cultivation, guided by the needful knowledge, would not fail to seal for ever the fate of imported hardy fruits.

basket. The fruits are packed in the baskets in two tiers, and each tier or layer comprises three rows with five Quinces in each of the outside rows and six in the middle row. When the fruits are placed the fuzz [packing material] is rubbed off the top, and the basket is ready for market. The baskets sell on an average for 50 [2s. 2d.] to 75 cents. [3s. 1½d.]. The double extra or keg grade comprises only the large and handsome fruits, and one of these kegs almost invariably sells for a higher price than a full barrel of No. 1."

The above is given as an idea of how careful the American grower is in grading, packing, and so making the most of his produce. It might well be applied in this country, and it would best serve the grower's interests in the long run, for the farmers' and cottagers'



FIG. 78.—CINERARIA MARITIMA VARIEGATA. (See page 444.)

But to return to the account given in "American Gardening" of "an eastern fruit farm" in Western New York. The Quince seems to be a favourite crop, the Maxwells having "two snug little orchards of 30 and 15 acres in extent . . . upon a pleasant slope. Nine thousand trees are now bearing in these two orchards. The 30 acre orchard is set 8 by 15 feet, but this distance is too small. Twelve feet by 12 or even 12 by 15 is now considered to be the ideal distance. But the orchards have given excellent most results. The larger one comprises trees from ten to twelve years old. It has given many good crops, a few of which have reached 1800 barrels [holding 2½ bushels]. The Orange Quince is the only variety grown for general purposes. The Quinces are sorted into three grades, known as XX, X, No. 1, and culls. The No. 1 and culls are shipped in barrels [holding 2½ bushels], the X or extra grade in 15 lb. or peck Grape baskets, and the XX or double extra in bushel kegs. All the profit is made on these two best grades. The extra or basket grade comprises those fruits of medium size and perfect shape, which will require just thirty-two specimens to fill a

fruit only give the costers the trouble of grading and pocketing the difference.

At this stage of the report the writer falls amuck of the growers over excessive pruning, which renders "the top so thick that fruit rot and other fungi are encouraged, and it often prevents the full colouring of the fruit . . . It is said that heading-in is a necessity when trees persist in growing from 2 to 3 feet every season, and this may be true; but it is a question if this much growth should be obtained on bearing trees. The very process of heading-in induces this strong growth, and it may be better to apply more potash and phosphoric acid and less nitrogen and cultivation." Very true. "But when the fuzzy green fruits are as large as a fully grown Hickory Nut they are systematically thinned by hand. This is the first picking, and it is quite as profitable in heavy bearing years as the more enjoyable harvest, which begins in the cool days of late September. And perhaps as much care and skill are necessary in the one operation as the other. The former requires judgment as to how many fruits to pick, and the latter requires



carefulness; for even Quinces must be handled like eggs to avoid the discoloration of bruises."

The extracts show conclusively the pains taken by the American grower to produce the finest and most fruit consistent with the regular bearing of the trees; also the care bestowed in packing and presenting it in such guise as to tempt customers as well as meet the requirements of all classes of buyers, and, of course, to the mutual interests of grower and consumer.

"Plum-growing, however, is perhaps the most absorbing interest of the Maxwells at the present time. The orchards are two, one of 75 acres and another of 5. In the larger orchard every effort has been exerted to make a model commercial plantation, and the results have

limbs. These, tastefully packed in little boxes, find a ready sale, especially in Boston, where the smaller the fruit the better it sells. In general, however, the French is considered to be the best of the Damsons, with a close second in the King. All the Plum orchards, 80 acres in extent, are sprayed three or four times each season for leaf blight, and the curculios are caught on sheets carried on wheelbarrow-like frames. During the past season most remarkable results in combatting leaf blight were obtained by spraying with modified eau celeste, to which soap was added to cause it to spread easily and to adhere to the foliage. These Plum orchards are regularly and systematically pruned, and this allows them to be set 15 by 15 feet apart without crowding. The Plum industry has many enemies—curculio, black knot, leaf blight,



FIG. 79.—ALOCASIA SANDERIANA VAR. NOBILIS. (See page 444.)

been most gratifying." Bavay or Reine Claude heads the list. "The tree is a poor grower, and it requires good care and cultivation, and perhaps for this reason it commands a high price. The greater number of people grow the cheap things, and leave the better markets free to their more enterprising neighbours." How true is it of English growers—they grow obsolete varieties, glut the market, and the foreign produce is held back until a favourable opportunity. "There is much call for Prunes, and the Fellemberg answers for all purposes, from the French and Italian to German Prune. It is one of the most reliable fruits of its class, and is distinguished in the orchard by its broad growth." This is the Italian Prune, and might succeed in good situations in this country, especially in the south, as it certainly does in the north of England against a wall, is a good bearer, and the fruit excellent for dessert or culinary purposes.

"To the curious observer who is fortunate enough to drive through this great orchard in August nothing will be so interesting as the long rows of Damsons, with neat little fruits hanging in ropes on the bending

and a host which has not yet been reduced to the limits of the alphabet; yet the crop is a profitable one if the grower know how to produce it."

"Six acres of Peaches—large Hill Chili, Salwey, and Early Rivers—have been an unusually successful venture. A good crop is obtained two years out of three, and the Chili, and sometimes the others, are systematically thinned in early summer. The trees are round-headed standards, and are severely shortened in every spring. Peach culture is an important industry in Western New York, finding its home upon the elevations which skirt the interior lakes, and upon the bolder ridges along Erie and Ontario.

"Seven acres of Cherries—Montmorency and English Morello, an orchard of Seckel [Seckle] Pears, Apricots, 70 acres of Oranges in Florida comprise the remainder of the Maxwell's fruit plantations, all of which are renowned for the most intelligent care and management."

Other matters relating to the nurseries of the Messrs. Maxwell are ably treated by Mr. L. H. Bailey in "American Gardening," but the above lengthy extracts are most likely to interest Journal readers.—G. ABBEY.





#### PROPAGATING NEW OR SCARCE VARIETIES.

AN opportunity will shortly occur whereby the stock of cuttings next November may be augmented with but little trouble. As the plants become well furnished with roots in the 5½-inch pots in which they are now growing they throw up suckers from the base. If these are taken off and inserted single in 2½-inch pots, giving them slight bottom heat, they will quickly make roots, finally shifting them into 6-inch pots and restricting their growth to one stem. The plants will not only produce one fairly large bloom each, but they will throw up many more cuttings next December than will probably the older plants.

#### WALL PLANTS.

Plants growing at the base of a wall where well supplied with water at the roots are now making excellent progress. No time should be lost in thinning out the shoots to prevent overcrowding. A space of not less than 4 inches ought to be provided for every shoot from them at this stage. Where the branches are allowed to grow some length before being secured to the wall they are in danger of hanging down and becoming crooked. In this way they never look so well afterwards as when fastened as growth is made. During dry weather a mulching of manure spread over the surface, a couple of feet away from the wall, will be of great advantage to the plants in maintaining the moisture in the soil, and be a saving of labour also.

#### MADAME DESGRANGE CHRYSANTHEMUMS IN BORDERS.

Where plants of Madame Desgrange and its forms were growing in the borders last autumn and not in any way protected during the winter many are now failing to grow, or they are in a weak state owing to the severity of frost. The blooms which this section produce during the months of September and October in the open border are so useful that no time should be lost in making up any deficiency in their number from the plants that flowered in pots last autumn. A number of plants can be made by pulling in pieces the old stools. These if carefully shaded for a few days after planting, by inverting an empty flower-pot over them, quickly catch hold of the soil when kept moist also, and by September will have grown into useful bushes.—E. MOLYNEUX.

#### MADAME H. FORTAMIER.

FIVE years ago this spring M. Rozain-Boucharlat sent out among the novelties of that season Condor, Geo. Daniels, and Etoile de Lyon, a remarkable and valuable trio of new seedlings. Although he has regularly distributed to the trade a collection of new Chrysanthemums every year since the three above mentioned were raised, there is not a single instance of any that has proved itself worthy of a place in the lists of prominent show flowers. It is to be hoped M. Boucharlat's hand has not lost its cunning. Among his new flowers for 1893, all of which are stated to be of very large build and great width of petal, there is a variety called Madame H. Fortamier, a Japanese with an incurved centre, with ivory white petals, which the raiser claims to be the largest Chrysanthemum known, excelling even Etoile de Lyon in this respect.

#### CHRYSANTHEMUM LITERATURE.

At the recent Exhibition of the R.H.S. at the Temple Gardens Messrs. J. Veitch & Sons displayed a collection of curiosities from Japan. Among them was a book entirely devoted to the Chrysanthemum, entitled "Kikkwa Meiji Sen," which is edited by a native Japanese, and contains a large number of coloured illustrations of flowers of medium size. The title page and names of the flowers are given in English as well as in Japanese, which lends an additional interest to the work. The flowers represented do not in any marked degree vary from those we know already; the colours are of various shades of white, rose, yellow, bronze, and purple, many of the varieties being of the tubular type. Some of our friends who complain of the monotony of Chrysanthemum Shows have here an idea upon which to work. Why not introduce classes for pictures of Chrysanthemums?

#### EARLY CHRYSANTHEMUMS.

A very decided advance was made in the cultivation of the Chrysanthemum when M. Simon Delaux obtained the first large flowered Japanese early blooming varieties, for until then the only earlies in cultivation in this country were of the Pompon type. He has already sent us over several instalments of the new earlies, and hitherto he has had a monopoly of them. This year, however, M. Boucharlat enters the lists with his more fortunate rival, and in announcing the distribution of a dozen new early flowering varieties, claims that they are the result of a rigorous selection, and are absolutely distinct from anything already known. Lovers of outdoor Chrysanthemums or anyone not possessing the convenience of a glass house have plenty to choose from. There are probably now upwards of 300 early flowering varieties.

#### AMERICAN CHRYSANTHEMUM SHOWS.

On the other side of the Atlantic there is an interesting feature adopted. At many of the shows every visitor is presented with what

they call an exhibition souvenir, which is usually a neatly printed little book, containing the work and object of the Society, a list of the officers and executive, a programme of the music performed during the time the Show is open, a list of exhibits and prizewinners, and two or three cultural articles. Some of them are so artistically got up that they well deserve to be carefully kept as interesting contributions to the literature of the popular autumn favourite.

#### NEW FRENCH VARIETIES.

Some people are inclined to think that the French growers have exhausted their resources, and as far as our getting good new show flowers from the other side of the Channel think we might as well give up the idea and look to ourselves or the Americans. The French, however, seem to be of a different opinion, and are sending out this spring 165 new seedlings of the ordinary November type without counting early and hairy sorts. There surely ought to be some grains of corn in so large a quantity of chaff. Any list of first-class Japanese Chrysanthemums for exhibition will show a larger proportion of varieties raised in France than elsewhere.

#### ITALIAN CHRYSANTHEMUMS.

Last spring there were several collections of new seedlings sent out by Italian growers. Unfortunately for them their novelties did not come prominently forward at the shows or in the trade displays. Mr. Jones of Lewisham had a few in fairly good form, Principe di Trabia, a large Japanese of light purple colour, being perhaps the best. I have not heard of any Italian seedlings being offered this year.—OBSERVER.

#### THE TEMPLE SHOW.

As briefly announced in our last issue, this annual Exhibition, held under the auspices of the Royal Horticultural Society in the Temple Gardens, E.C., opened on Thursday, May 25th, and continued the following day. It was, as on former occasions, a grand Show, and fortunately beautiful weather prevailed. There was a large attendance of visitors on both days, so in most respects the Exhibition must again be described a success. As in previous years, the exhibits were arranged in a quartet of marquees, three of which were about 160 feet in length. The centre of one was devoted to Orchids, which formed a special feature, whilst around the sides were arranged in excellent style some grand groups of miscellaneous flowering and foliage plants. Roses in pots were not so extensively shown as we have seen them at this Exhibition, this doubtless being caused by the exceptionally dry weather. Another large tent was filled with Orchids and various greenhouse plants. The Tuberous Begonias and Gloxinias were very fine, as will be seen by the remarks appended. Hardy flowers were well represented, some charming collections coming from all the leading growers. Of fruit, too, there were some interesting exhibits.

#### ORCHIDS.

These were examined by the following members of the Orchid Committee:—Messrs. Harry J. Veitch (Chairman), J. O'Brien, De B. Crawshaw, Thos. Statter, Chas. Pilcher, Hugh Low, H. M. Pollett, W. H. White, A. H. Smee, H. Ballantine, Jas. Douglas, Thos. Bond, and Sir Trevor Lawrence, Bart.

Orchids, as already remarked, made a charming display, the majority of these being arranged in the centre of the largest marquee. Baron Schröder, The Dell, Egham (gardener, Mr. H. Ballantine), sent a large group arranged with admirable taste. There were some very fine species and varieties amongst these, and the whole of them were well grown. Conspicuous amongst others were some magnificent examples of *Cattleya Mendelli*, *C. Lawrenceana*, *C. Mossiae*, a grand plant of *C. Skinneri*, and *Lælia purpurata*. A plant of *Cattleya Skinneri* bore about fifteen spikes, each carrying nearly a dozen flowers. A splendid piece of *Cattleya Warscewiczii Sanderiana* was also much admired. This had four magnificent spathes, the largest carrying six very large flowers with brilliantly coloured lips. *Odontoglossums* were likewise finely represented in this group. Amongst others *O. crispum apiatum* was most noticeable, this plant bearing a grand spike with fifteen flowers of an unusual size, and a large piece of *O. Pescatorei* with six spikes was conspicuous. Some excellent forms of *O. crispum* and *O. vexillarium* also added interest to the display, and the same may be said of the pretty *Vanda teres*. *Cypripediums* were best represented by *C. Stonei*, a plant of which had two spikes, each carrying four flowers; *C. grande*, very fine; *C. caudatum*, *C. Lawrenceanum*, and *C. superciliare* were also good. *Dendrobiums*, *Masdevallias*, and *Epidendrums* were well shown, and these added colour and variety to this splendid contribution, for which a silver cup was awarded. In addition to this group Baron Schröder exhibited a magnificent plant of *Cœlogyne Dayana*, possibly one of the finest specimens ever seen at a show. The plant bore about 800 flowers, these being produced on twenty pendulous racemes, averaging forty blooms on each. Besides awarding a first-class certificate for it the Orchid Committee recommended a silver Flora medal.

Sir Trevor Lawrence, Bart, Burford Lodge (grower, Mr. White) also staged a splendid group of Orchids. These were arranged in excellent style and added much to the beauty of the Show. Noticeable amongst these were *Cattleyas*, *Lælias*, *Odontoglossums*, *Dendrobiums*, *Masdevallias*, and *Cypripediums*. A fine piece of *Lælia purpurata Bryseana* was most conspicuous, as also was a grand plant of the beautiful *Sobralia macrantha*. *Cattleya Mossiae*, Wagner's var., bearing half a



dozen flowers of pure whiteness, with the exception of a lemon coloured throat, was very conspicuous, and the same may be said of the charming *Miltonia vexillaria* Fairy Queen. A fine plant of *Cattleya labiata* bearing nearly a dozen flowers was likewise good, and among *Cypripediums* the pretty *C. superciliosum* and *C. Swianum* were noticeable. A silver cup was awarded for this attractive collection.

A magnificent group was sent by Messrs. F. Sander & Co., St. Albans, and for which a silver cup was awarded. The Orchids in this collection were arranged in masses, which made their characteristics more conspicuous, although there was not so great a variety as in some of the other contributions. Still some splendid forms were noticeable, and the group attracted much attention. A number of *Epidendrum vitellinum* showed up conspicuously against some plants of *Odontoglossum crispum* in variety. At the back of these were good plants of *Phalænopsis*. A mass of *Cattleya Mossiæ* made a display against some grand plants of *Cymbidium Lowianum*, and near to the front of the group were plants of *Anguloa Ruckeri*. Among the other plants in this collection were a small one of *Odontoglossum vexillarium* Leopoldi, G. D. Owen's var., a pretty form, and *O. vexillarium* Princess May, for which an award of merit was adjudged. This is described elsewhere. Awards of merit were also accorded for *Lælia purpurata nobilis*, and *Odontoglossum Wattianum*, Hardy's var., both of which are described elsewhere. *Cattleya Mendelli* alba, *C. Mossiæ* var. Fairy Queen, and *C. Mossiæ* T. R. Watts var., were also noticeable in this group. The last named plant is a charming form with magnificent flowers.

Messrs. B. S. Williams & Sons, Upper Holloway, also sent a large collection of Orchids, attractive in appearance and admirably arranged. Among these were a grand plant of *Cymbidium Lowianum* and a splendid specimen of *Cattleya Lawrenceana*. *Dendrobium densiflorum*, *Cattleya Mendelli*, and *Odontoglossum vexillarium* were also very good. A silver-gilt medal was recommended for this exhibit. De B. Crawshay, Esq., sent a fine form of *Odontoglossum crispum* named Princess May of Teck, which had been named by Her Serene Highness's special permission. Messrs. Hugh Low & Co., Clapton, had a large group of Orchids composed principally of *Cattleyas*, such as *Mossiæ* and *Mendelli* in various forms. A number of *Cypripedium pedatum* and *Odontoglossums* completed the arrangement (silver-gilt Flora medal). Messrs. Low & Co. sent *Cypripedium Volanteum giganteum*, for which an award of merit was adjudged. This is described elsewhere. C. J. Lucas, Esq., Warnham Court, Horsham, had a very fine group, and for which a silver cup was awarded. These were tastefully arranged, and made a most charming display. Amongst others were the beautiful *Cattleya Warszewiczii*, *C. Mossiæ*, *C. Mendelli*, *Lælias*, *Oncidiums*, *Odontoglossums*, and *Masdevallias*. Messrs. J. Cypher & Co., Cheltenham, staged a splendid collection, and a silver cup was awarded. Noticeable amongst these were some grand forms of *Lælia purpurata*. One named *L. p. atro-purpurea* was adjudged an award of merit. This is a striking variety, and is described below. An award of merit was also accorded for *L. purpurata* Niobe. Other good forms were *L. p. Russelliana*, *L. p. The Duchess*, and *L. p. alba*. Some plants of *Odontoglossum vexillarium* added interest to the group. Norman C. Cookson, Esq., Wylam-on-Tyne, had a plant of *Cattleya hybrida* "William Murray," for which a first-class certificate was awarded. This is a splendid hybrid, and is described elsewhere.

Some Orchids were also arranged in another large tent. In this department Major-General E. S. Berkeley, Bitterne, Southampton, had a small collection of *Dendrobium amicum*, and Messrs. Heath & Sons, Cheltenham, sent a group of *Lælia purpurata* and a seedling *Lælia* of merit. H. Bass, Esq., Byrkley, Burton-on-Trent (gardener, Mr. J. Hamilton), had a group of *Cattleya Mossiæ*, the plants being crowded with blooms; a silver Knightian medal was recommended. Messrs. W. L. Lewis & Co., Southgate, had a very fine collection, arranged in a tasteful manner. *Cattleyas*, *Lælias*, and *Odontoglossums* were noteworthy in this exhibit, a small plant of *Cattleya citrina* Lewisiana being most conspicuous. This is a rich yellow flower, with an orange lip. A fine specimen of *Vanda cœrulea* was also conspicuous, and the same applies to *Phalænopsis grandiflora* and *Lælia grandis tenebrosa*; a silver Flora medal was recommended. Messrs. Pitcher & Manda, Hextable, were awarded a silver cup for a large collection of Orchids and other plants. Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, sent a group of Orchids, comprising *Cypripediums* in variety, *Cattleyas*, *Dendrobiums*, and others (silver Flora medal). Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, had a fine group tastefully arranged. Conspicuous amongst these were some good plants of *Oncidium macranthum*, and a splendid specimen of *Lælia purpurata*. An award of merit was accorded for *Lælia Warneri* formosa, which is referred to elsewhere. Some plants of *Lælia tenebrosa* were also conspicuous in this group, for which a silver-gilt Flora medal was recommended. F. W. Wigan, Esq., also sent a collection of Orchids, including some charming species and varieties, and for which a silver-gilt Knightian medal was recommended.

#### GROUPS AND COLLECTIONS OF PLANTS.

The following members of the Floral Committee examined the groups and collections of plants and cut flowers:—Messrs. W. Marshall (Chairman), Chas. Noble, W. Watson, H. B. May, Robt. Owen, Harry Turner, Geo. Stevens, Thos. Godfrey, J. H. Fitt, F. Ross, Chas. Jeffries, J. Jennings, Wm. Bain, H. Herbst, Jas. Walker, John Laing, Walter Furze, C. E. Pearson, C. J. Lucas, and R. B. Lowe.

The groups and collections of various plants were very fine. Messrs. Jas. Veitch & Sons, Royal Exotic Nursery, Chelsea, staged a group of hardy flowering and foliage plants. This contribution was admirably

arranged, and contained, amongst others, grand examples of *Lilium longiflorum* Harrisii, *Hydrangea paniculata* grandiflora, *H. hortensis* Thomas Hogg, *Spiræa astilboidea*, *S. bumalda*, *Clethra alnifolia*, *Azalea Aida*, *A. rosæflora*, *A. Milton*, *Cytisus scoparius* Andreanus, *Andromeda speciosa* cassinefolia, *Acer palmatum sanguineum*, *A. p. palmatifidum*, *A. p. variegatum*, *Weigela rosea* Looymansii aurea, *Syringa japonica*, *Eulalia japonica* variegata, and *Cornus sanguinea* variegata. Messrs. J. Veitch & Sons also had a collection of *Streptocarpus* and a number of *Gloxinias*, fresh and varied in colour. The best of the *Gloxinias* were *Monarch*, *Celia*, *Claudia*, *Claribel*, *Sylvia* and *Hector*, the last named being a very bright variety. Plants of *Caladium Souvenir de Para* were also shown by Messrs. Veitch. This variety was figured in the *Journal of Horticulture* for March 30th, 1893. The same firm sent *Anthurium Rothschildianum*, a pretty hybrid, and some new plants, including *Begonia decora* (figured in *Journal of Horticulture* for March 9th, 1893), *Strobilanthes Dyerianus* (illustrated in the *Journal* for May 4th, 1893), *Begonia Maria Louise* (figured in the *Journal* for September, 1st, 1892) and *Rhododendron Ariel*. An award of merit was adjudged for the last named plant. This *Rhododendron* is described under the "Certificates and Awards." A silver cup was awarded Messrs. J. Veitch & Sons for their interesting exhibits.

A group of foliage and flowering plants was contributed by Messrs. B. S. Williams & Son, Upper Holloway, N. The exhibit consisted of *Azaleas*, *Spiræas*, *Palms*, *Imantophyllums* (*Clivias*), *Anthuriums*, *Oranges* carrying fruit, *Ericas*, *Ferns*, *Crotons*, *Amaryllises*, and *Dracænas*. Messrs. E. D. Shuttleworth, Peckham Rye, S.E., arranged a charming group of miscellaneous plants, including *Palms*, *Ferns*, *Liliums*, *Zonal Pelargoniums*, *Dracænas*, and *Crotons*. The same firm also exhibited a noteworthy group of *Cycads* in variety. A silver-gilt medal was recommended to be awarded this rising firm for their exhibits. Mr. H. J. Jones was represented by a collection of *Show and Fancy Pelargoniums*, amongst the most striking of which were *Princess May*, *Mrs. Stone*, *Venus*, *Prince of Orange*, *Agnes Cook*, *Empress of India*, *Mabel*, *Marguerite*, *Eclipse*, *Blanche*, *Sir Trevor Lawrence*, *Flora*, *Hercules*, *Rose Queen*, and *Little Richard*. A silver Flora medal was recommended for this exhibit. A yellow *Chrysanthemum*, named *Chas. Davis*, a sport from *Vivian Morel*, was also shown by Mr. Jones, who likewise had plants of his *Ryecroft Surprise* Ivy-leaved *Pelargoniums*, an exceedingly pretty variety.

Messrs. J. Laing & Son, Forest Hill, S.E., had a collection of flowering and foliage plants, amongst which specimens of *Anthurium Scherzerianum* magnificum, *Ferns*, *Palms*, *Croton Challenger*, *C. Reidi*, *C. Mortii*, *C. Prince of Wales*, and *C. Thomsoni* (award of merit), *Dracæna Lindenii*, *Coleus Stanstead Beauty*, *Dracæna norwoodiensis*, *D. australis* variegata, and *Caladiums* were particularly noticeable. Orchids were excellently represented with *Cattleyas* and *Odontoglossums*. A group of magnificent *Caladiums* was staged by Messrs. J. Laing & Son. The most noticeable varieties in this exhibit were *Candidum*, *Triomphe de l'Exposition*, *Souvenir de Madame Bernard*, *Aïda*, *John Laing*, *Luddemannii*, *L'Automne*, *Clio*, *Monsieur de Halloy*, *Gerard Dow*, *Reine de Danmark*, *Mrs. Harry Veitch*, and *Ibis Rouge*. Awards of merit were adjudged for the two last-named varieties. This exhibit was unquestionably one of the features of the Show. A charming and effective group of *Tuberous Begonias* was also arranged by Messrs. J. Laing & Son. The *Begonias* were intermingled with *Ferns*, and the effect produced was an excellent one. The best amongst the doubles were *Duchess of Teck*, *Duke of York*, *Lady Brooke* (award of merit, see below), *Miss French*, *Purity*, *Lord Esher*, *Lady Dorrington*, *Earl of Craven*, *Henshaw Russell*, *Lord Brooke* (award of merit, see below), *Stanstead Gem*, *W. Clifford*, *Mrs. Regnarte* (award of merit), *Mrs. Hudson*, *Baron Schröder* (award of merit), and *Beauty of Belgrove*. The singles included *H. M. Stanley*, *Duchess of Leinster*, *Mr. Wm. Miller*, *Countess of Westmoreland*, and *Lady Scott*. A silver cup was awarded Messrs. J. Laing & Son for the *Caladiums* and *Begonias*, and for groups of miscellaneous plants the Floral Committee recommended a silver-gilt medal.

Messrs. Hugh Low & Co., Clapton and Bush Hill Park Nurseries, exhibited a collection of well grown *Ericas*, prominent amongst which were *E. ventricosa* grandiflora, *E. v. globulosa*, *E. perspicua* erecta, *E. Spenceri*, *E. v. coccinea* minor, *E. depressa* multiflora, *E. candidissima*, *E. Cavendishi*, *E. intermedia*, and *E. v. rosea* (silver-gilt Flora medal). Mr. Chas. Turner, Royal Nurseries, Slough, sent plants of *Souvenir de la Malmaison* *Carnations* which were very fine indeed. A basket of *Germania* *Carnations* was also shown by Mr. Turner, and plants of *Turner's Crimson Rambler Rose* (silver-gilt Flora medal). Messrs. John Peed & Son, Roupell Park Nurseries, Norwood Road, S.E., sent a beautiful group of flowering and foliage plants which included *Begonias*, *Cypripediums*, *Odontoglossums*, *Hydrangeas*, *Caladiums*, *Liliums*, *Azaleas*, *Crotons*, *Dracænas*, *Palms*, *Ferns*, and *Anthuriums*. A silver-gilt Flora medal was recommended.

In inviting groups of greenhouse and stove foliage plants the Society have made a fresh and what should be a very popular departure. Mr. A. Offer, gardener to J. Warren, Esq., Hand Cross Park, Crawley, staged a very fine group in this section, and was awarded a silver cup. His exhibit included fine specimens of *Crotons*, *Cycads*, *Palms*, *Marantas*, *Dracænas*, and *Ferns*. Mr. Offer also showed a group of six hardwooded greenhouse plants in flower. Excellently trained and flowered specimens of *Azalea Brilliant*, *Erica Cavendishi*, *Hedera fuchsoides*, *Aphelexis macrantha* rosea, *A. m. purpurea*, and *Dracophyllum gracile* were staged. P. Crowley, Esq., Waddon House, Croydon, was also awarded a silver cup for a group of foliage plants, well



grown by his gardener, Mr. King. Palms, Dracænas, Alocasias, Caladiums, Adiantums were included in this contribution.

Messrs. Wm. Cutbush & Son, Highgate Nurseries, exhibited a charming group of miscellaneous plants. Ericas, Palms, Dracænas, Hydrangeas, Crotons, and Liliams were particularly prominent in this exhibit, for which a silver-gilt medal was recommended. Messrs. Jas. Carter & Co., High Holborn, had collections of Streptocarpus, Mimuluses, Gloxinias, and Petunias. The colours in the Gloxinias were very diversified, ranging from a rich dark purple to a pure white. The Petunias exhibited by this firm were very fine. The same firm also staged a collection of Calceolarias of good habit and varied colours. A silver-gilt Flora medal was recommended for the various exhibits staged by Messrs. Carter & Co.

#### ROSES, FERNS, AND BEGONIAS.

Messrs. G. Paul & Son, The Old Nurseries, Cheshunt, staged a magnificent group of Roses and Cannas. Prominent amongst the former were Innocente Pirola, Edouard Morren, Juno, Madame de Watteville, Madame Hoste, Lady Alice, Crimson Queen, Mons. Furtado, Ulrich Brunner, Celine Forestier, Copper Austrian (Briar), Harrisoni (Briar), and a single Rose Carmine Pillar. The Cannas were finely represented by Professor David, Madame Crozy, Sophie Buckner, Paul Bruant, Chas. Moore, Primrose, Admiral Gearvis, Victor Hugo, and Miss Sarah Hill. The same firm also exhibited a few baskets of Rhododendrons, including Marchioness of Lansdowne, Lady Eleanor Cathcart, Purity, Michael Waterer, Miss Holford, Mrs. Russell Sturges, Vauban,



FIG. 80.—PRIMULA REIDI. (See page 444.)

Ingrami, and Kate Waterer. A silver cup was awarded Messrs. Paul and Son. Mr. Wm. Rumsey, Joyning's Nurseries, Waltham Cross, exhibited a group of Roses in pots, and also boxes of cut Roses. Notable amongst the kinds in pots were Madame Hoste, Queen of Queens, Lady Helen Stewart, Edouard Morren, Prince Camille de Rohan, Merveille de Lyon. A box of Maréchal Niel was very striking. In the other boxes were to be seen Niphetos, Reine Marie Antoinette, Grace Darling, Eugénie Verdier, and Austrian Briar Harrisoni. A silver-gilt medal was recommended.

Mr. Frank Cant, Rose-grower, Braiswick, Colchester, exhibited five boxes of cut Roses. The varieties represented in this collection comprised flowers of Maréchal Niel, Dupuy Jamain, The Bride, Madame Victor Verdier, La France, Madame Lambard, Souvenir d'un Ami, Madame Bravy, Catherine Mermet, and Madame Hoste (silver Flora medal). Messrs. G. Cooling & Sons, Bath, sent boxes of cut Roses, including the single varieties. The Austrian Briars and Persian Yellow Roses were especially good, as likewise were the Moss Roses. Mr. George Mount, Canterbury, also sent a number of cut Roses. The best of these were Catherine Mermet, The Bride, Mrs. J. Laing, Dupuy Jamain, Marie Baumann, and Maréchal Niel. Messrs. Keynes, Williams & Co. sent two boxes of hybrid Sweet Briars and Austrian Briars for which a silver medal was recommended. Lord Penzance, Eshing Park, Godalming (gardener, Mr. G. Baskett), also sent some beautiful hybrid Sweet Briars, and a silver gilt Flora medal was recommended.

Messrs. Sutton & Sons sent a charming group of Gloxinias. These included the new varieties Duke of York, Her Majesty (pure white), Empress of India, and Netted Queen, for which an award of merit was adjudged. Plants of the recently introduced Nemesia Strumosa Suttoni in pots were also shown by the same firm. A silver-gilt medal was recommended. C. J. Tasker, Esq., Brentwood, Essex (gardener, Mr. J. Perry), had boxes of Canna blooms and cut Roses (silver Banksian medal). Messrs. J. Peed & Sons, Roupell Park Nurseries, Norwood, sent a collection of Gloxinias arranged with Maidenhair Ferns (silver-gilt

medal). Messrs. F. Sander & Co., St. Albans, staged a collection of new and rare plants, comprising Cineraria maritima variegata (award of merit—see engraving, page 438). Alocasia Sanderiana var. nobilis (first-class certificate—see page 439). Blandfordia nobilis, Dipladenia atro-purpurea, Anthurium albanense, Aristolochia gigas var. Sturtevanti, Arisæma fimbriata, and Alocasia Sanderiana magnifica.

Ferns were well represented. Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, had a large collection. These comprised Gymnogramma Wettenthalianum, Davallia elegans, Nephrolepis recurva, Dicksonia squarrosa, Lomaria gibba, Pteris tremula Smithiana, Pteris Victoria, P. nivalis, Cibotium regale, and Asplenium marginatum. A first-class certificate was awarded for the last named Fern. A silver cup was recommended for the whole collection. Mr. May also had plants of Cineraria maritima aurea variegata (an award of merit), and Duke of York Carnation, a dark Clove-scented variety. Messrs. W. & J. Birkenhead also had a splendid collection of Ferns, comprising stove, greenhouse, and hardy varieties, for which a silver cup was awarded. Amongst these were Adiantum macrophyllum bipinnatum, Davallia tenuifolia Veitchiana, Pteris Victoria, Davallia fijiensis elegans (award of merit), Athyrium setigerum grandiceps (award of merit), and Nothochlæna mollis (award of merit). The hardy Ferns were good, and amongst them were some grand forms. The best were Athyrium f.f. setigerum capitatum, A. f.f. Frizellæ corona, and A. f.f. setigerum Victorice.

Begonias were exceptionally good, some splendid groups being staged by the leading growers. Messrs. H. Cannell & Sons, Swanley, sent a most magnificent group of double and single varieties, for which a silver cup was awarded. Amongst the singles were Earl Grosvenor, Seven Inch, the name of which is peculiarly appropriate, as it denotes the size of the individual blooms; Miss Agnes Stewart, Mrs. Guthrie, Duchess of Westminster, Countess of Dunmore, Mrs. John Thorpe, Danebrog, and Gigantea. The double varieties included Miss Edith Wynne, General Owen Williams, J. Lyon, Lady Roberts, Leopold Rothschild, Lord Llangattock (award of merit, see below); Golden Queen, Mrs. Lynch, Mrs. French, Lady Henry Bruce, Miss Elsey Wire, Mrs. Walter Palmer, Miss Leith, Mrs. W. B. Miller, and Miss E. Terry. The same firm also staged a collection of Gloxinias, containing some very beautiful forms. Messrs. Cannell also showed a group of Improved Raspail Pelargoniums. Mr. T. S. Ware, Hale Farm, Nurseries, Tottenham, N., exhibited a grand collection of double and single Begonias. Amongst the varieties shown were Princess May, Bexley Gem (award of merit); Miss Jennie Fell, Beauty of Belgrove, Elegans (award of merit); Claribel, Lord Byron, Viscountess Cranbrook, Picotee, Iona, Couronne, Henshaw Russell, and Alba Magna. Messrs. J. Laing & Sons also had Begonias, but these have already been mentioned.

#### HARDY PLANTS AND CUT FLOWERS.

Hardy cut flowers and alpine plants were extensively shown. Messrs. J. Backhouse & Sons, The Nurseries, York, staged a splendid collection of alpine and herbaceous plants, for which a silver cup was awarded. These included choice Saxifragas, Ramondia pyrenaica, Dianthus, Aster alpina albus, and Ferns. The Guildford Hardy Plant Nursery Co. had a grand collection of alpines, arranged in a charming manner (silver-gilt medal). Among these were some plants of Rhododendron ferrugineum majus full of flower, Saxifragas, and miniature Campanulas. Pernettyas were also represented in this group. Messrs. E. D. Shuttleworth & Co., Peckham Rye, also had hardy flowers, including Iris and Delphiniums in variety. Messrs. J. Laing & Son also had hardy flowers. A silver medal was recommended in each case. Messrs. Harkness and Sons, Bedale, sent a collection of hardy cut flowers, comprising Pyrethrums in variety, Poppies, Centaureas, Campanulas, and Heuchera sanguinea (silver-gilt Flora medal). Messrs. Cutbush & Sons, Highgate, had a large collection of hardy flowers, including Pyrethrums, Iris, and Ixias. The latter were very fine, and attracted attention, especially I. viridiflora. Some sprays of Campanula persiciflora alba grandiflora were noticeable in this group, as also were the Oriental Poppies (silver medal). Mr. M. Prichard, Christchurch, had hardy flowers, amongst these being a grand spike of Eremurus robustus, Aquilegias in variety, and Poppies (silver-gilt Flora medal). Messrs. J. Cheal & Sons had plants of Tom Thumb Dahlias in pots and a very fine collection of Violas and hardy flowers (silver medal). Messrs. Collins Bros., Hampton, sent a large collection of Iris of various kinds (silver medal). Mr. C. G. Van Tubergen, Haarlem, staged a number of cut flowers, including grand blooms of Iris Lorteti and Calochorti (silver medal).

Tulips were finely shown by J. W. Bentley, Esq., Stakehill, Castleton, Manchester. The best blooms in this collection were Sulphur, bizarre breeder; Friar Tuck, flamed; George Hardwick, feathered; May Queen, feathered; Sir J. Paxton, flamed; and Dr. Hardy, flamed (silver medal). Messrs. P. Barr & Sons also had a collection of English Tulips. The blooms were fresh and varied in colour, the various types being well represented. Messrs. Barr & Sons also had a large collection of hardy flowers—Ixias, Gladioli, Iris, Poppies, and Violas, all in excellent condition. We have seldom seen a finer collection of hardy flowers. A silver cup was awarded for this meritorious contribution. Mr. T. S. Ware, Tottenham, arranged a group of hardy plants containing amongst others Pyrethrums, Anthericum grandiflorum, Iberises, Irises, Spiræas, Liliams, Saxifragas, Pæonies, Poppies, Antirrhinums, Delphiniums, and Veronicas (silver-gilt Flora medal). Messrs. Kelway & Son, nurserymen, Langport, contributed a collection of hardy flowers, including some magnificent Pæonies, Irises, Pyrethrums, Gaillardias, and a very fine collection of Delphiniums. The same firm also had a collection of Amaryllises. A silver-gilt Flora medal was recommended.



Messrs. Dobbie & Co., Rothesay, N.B., staged a magnificent collection of *Violas* and *Pansies*. Amongst the more prominent of the *Violas* were *Tory*, *H. W. Stewart*, *Dawn of Day*, *Countess of Kintore*, *Joy*, *Countess of Hopetoun*, *Mrs. H. Bellamy*, *Wonder*, *Mrs. Kinnaid*, *Lemon Queen*, *Gipsy Queen*, *Laverock*, *Topsy*, *Goldfinch*, and *Rob Roy* (silver-gilt medal). Messrs. Jas. Cocker & Son, nurserymen, Aberdeen, staged a charming collection of hardy plants, including *Violas*, *Poppies*, *Polyanthuses*, *Centaureas*, and *Geums*, for which they were recommended a silver Banksian medal. The same firm also staged *Polyanthus Queen Victoria*, for which an award of merit was accorded (see below). Mr. T. Gifford, Montague Nurseries, Tottenham, N., staged a collection of blooms of *Paeonia albiflora* and *P. a. rosea*. Mr. A. Smith, Prospect House, Downley, High Wycombe, sent some *Violas*, *Pansies*, and cut *Roses*.

#### MISCELLANEOUS.

Mr. Bain, gardener to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, sent a group, including *Richardia Elliotiana*, *Cyrtanthus Hut-toni*, *Anthurium Burfordiense*, *A. Andreanum*, *A. Edwardsi roseum*, *A. Laingi*, *A. Andreanum sanguineum*, and some seedlings. G. A. Farini, Esq., Dartmouth Lodge, Perry Vale, Forest Hill, staged a very creditable collection of double *Begonias*, comprising some excellent plants, especially when it is considered that Mr. Farini has only grown for *Begonias* two years (silver medal). Messrs. Reid & Borneman, Sydenham, S.E., contributed a small group of a new *Lobelia Gold Sapphirs*. The same firm also arranged a group of flowering plants, including *Pelargoniums*, *Hydrangeas*, *Liliums*, *Cannas*, *Amaryllises*, *Ferns*, and *Asparagus plumosus* (silver medal). Mr. J. Walker, nurseryman, Thame, Oxon, staged a collection of *Zonal Pelargoniums*, comprising double and single varieties (silver medal). Messrs. W. Balchin & Sons, Hassocks, had a group of *Leschenaultia biloba major*, and some blooms of *Pyrethrum Jubilee*, a rich crimson variety. Messrs. R. Veitch & Sons, Exeter, sent plants of *Vallota purpurea* var. *Perfection*, *Crimson Gem*, and *Delicata*. An award of merit was adjudged for the last named. G. F. Wilson, Esq., Heather Bank, Weybridge Heath, secured a first-class certificate for a plant of *Primula Reidi*, which is described elsewhere. Messrs. B. S. Williams & Son had some new *Dracaenas* and *Amaryllises*. Awards of merit were adjudged for *Dracaena Lord Wolseley* and *Amaryllis Lord Roberts*. Mr. C. Turner, Slough, had blooms of *Iver White Carnation*; and Mr. C. Blik, Hayes Common, sent *Carnations*. Awards of merit were adjudged for the *Carnations Churchwarden* and *Mrs. Seymour Bouverie*, both good varieties. They are described under "Certificates and Awards."

Bouquets were fairly well shown. Mrs. Thewles, Birmingham, sent a bride's bouquet composed of *Odontoglossums*, white *Carnations*, *Pan-cratioms*, and *Grasses* (silver-gilt medal). Mr. J. Chard, Stoke Newington, had examples of *Arcadian* decorations tasteful in arrangement (silver medal). Messrs. Perkins & Sons, Coventry, sent a number of bouquets and wreaths composed of *Orchids* and *Carnations* (silver-gilt medal). Mrs. Hodgkins, 5, Beaumont Avenue, Didsbury, staged a most interesting collection of skeletonised flowers and leaves.

#### FRUIT.

The following members of the Fruit Committee examined the collections:—Philip Crowley, Esq., Chairman; with Dr. Hogg and Messrs. H. J. Pearson, Harrison Weir, W. Warren, G. Norman, T. J. Salt-marsh, J. Willard, A. Young, J. Cheal, A. H. Pearson, A. Dean, G. Reynolds, G. W. Cummins, G. Wythes, J. Hudson, T. F. Rivers, E. Burrell, F. Q. Lane, Arthur G. Sutton, W. H. Divers, G. Woodward, J. A. Laing, and J. Wright.

Though the display of produce was by no means extensive there were, nevertheless, some noteworthy exhibits. Mr. Rivers' group of *Early Rivers Nectarine* trees in pots was decidedly unique, inasmuch as it will be strictly accurate to say that all the world, apart from Sawbridg-worth, could not produce its equal as representing the earliness, size, and colour of this splendid Nectarine. There were two dozen trees in 10 and 12-inch pots—pyramids, low bushes, and standards, each bearing about a dozen large and handsome bronzy-red fruits; such fruits as have sold for 48s. a dozen in Covent Garden. The Committee unanimously recommended a silver-gilt medal for this group, but the Council went a step in advance and granted a silver cup. This was certainly well merited when it is considered that Mr. Rivers was not only the grower of the trees, but the raiser of the variety. It may be expected that *Early Rivers Nectarine* will eventually find its way into gardens all over the kingdom and beyond our shores. A low standard tree was figured on page 159, *Journal of Horticulture*, August 20th, 1891, and a dwarf one is represented in the engraving fig. 81.

The next most noteworthy exhibit in the tent was from Mr. S. Mortimer, Rowledge, near Farnham, and consisted of *Cucumbers*, *Melons*, and *Tomatoes* in considerable numbers and of splendid quality. The tender-looking *Cucumber Success* or *Sutton's Peerless* (certificated last year) was temptingly displayed, and there were boxes of two new varieties with familiar names—*Duke of York* and *Princess May*. Though the fruits were as near perfection in shape as could well be imagined, the varieties did not stand out with sufficient distinctness to receive a special award. The *Tomatoes* comprised boxes of *Sutton's Earliest of All* and *Perfection*, excellent fruits; *Jones' Perfection*, smooth and handsome; *Sharpe's Plentiful*, flattish smooth, with *Conqueror* and *Magnum Bonum* corrugated. Mr. Mortimer staged a dozen fine fruits of the *Conqueror Melon*, a free bearing and good old variety for market, also satisfactory examples of *Sutton's Al*, *Empress*, *Hero of Lockinge* and *Golden Perfection*. A new variety, *Duke of York*, was too small, and not in the best of condition. A silver-gilt Knightian medal

was unanimously recommended for the collection by the Committee and confirmed by the Council.

Mr. G. Featherley, The Vineries, Gillingham, Kent, had a highly meritorious exhibit, including baskets of *Black Hamburg* and *Muscat of Alexandria* Grapes, both excellent; *Carter's Model Cucumbers*, smooth and fine; *Austin's Eclipse* *Tomatoes* an excellent sample; good *Peaches*, and a basket of *Ne Plus Ultra Dwarf Kidney Beans*. A small silver medal was unanimously recommended by the Committee, but the Council in the exercise of their judgment and power granted a silver-gilt Knightian. From Lord Foley's gardens, Ruxley Lodge, Esher, Mr. Miller brought a creditable collection of fruit, including good dishes of *Sir Joseph Paxton*, *Noble*, and the *White Bieton Pine Strawberries*, also *Black Heart* and *Bigarreau Cherries*, with *Ruxley Lodge Melons* and *Norfolk Beefing Apples*. The Committee recommended a bronze medal for the exhibit, but the Council granted a silver Banksian medal. Similar improvements on the Committee's recommendations were made in respect to excellent *Brown Turkey Figs* and *Lord Napier Nectarines* from Mr. Wythes; also in the case of six very good dishes of *Figs* from E. Dresden, Esq., Livermore Park, Bury St. Edmunds (gardener, Mr. J. C. Tallaek), but Mr. J. McIndoe's award of a vote of thanks for attractive fruits of *Best of All Melons*, an excellent dish of *Nectarines*, and two dishes of *Peaches* appeared to be held by the Council as



FIG. 81.—DWARF NECTARINE TREE.

a sufficient recognition. Had the Committee been aware of the disposition of the Council to be more generous on the occasion of a Temple Show than at the fortnightly meetings it is practically certain that a medal of some kind would have been recommended for Mr. McIndoe's collection, and certainly no generosity was shown to him by the supervisors. It appears the Council decided to award no bronze medals at this Show, but the Committee were not aware of this, though the Chairman is a member of the governing body, and proceeded with their duties in the ordinary way.

Several *Melons* were staged. Mr. C. Ritchings sent capital fruits of *Ritchings' Perfection*, a good *Melon*, previously certificated. He also exhibited a seedling from it, but could not retard the ripening process to "time" it for the occasion. Mr. N. Molyneux, Rookesbury Park, seems to have been in much the same position with his seedling from *Hero of Lockinge* and *Searlet Gem*, which ripens a fortnight earlier than the last-named, for the fruit was in a state of ferment, and so were other fine *Melons* from *Whitfield Gardens*, Hereford. Mr. J. McKinley, The Gardens, Belmont, Hereford, exhibited twelve large straw-coloured *Melons* not to be cut, and was accorded a vote of thanks. A similar mark of recognition was entered for a collection of *Apples* from Messrs. James Veitch & Sons, Chelsea.

A highly interesting collection of woods and seeds, also bottled and preserved fruits indigenous to Japan was sent from that country by Mr. James H. Veitch of the Royal Nurseries, Chelsea. Among these were some *Bamboo shoots* said to correspond with *Asparagus*, and some



preserved Peaches. About 128 kinds of cereal and other seeds were sent by Mr. Veitch, as also were some coloured illustrations of Chrysanthemums as grown in Japan. This collection must be regarded as a valuable addition to the Veitch museum at Chelsea.

#### CERTIFICATES AND AWARDS.

*Cælogyne Dayana* (Baron Schröder).—A magnificent plant of this well-known Orchid was shown. It bore twenty pendulous racemes, each bearing on an average forty flowers, in all about 800 blooms (first class certificate and silver Flora medal).

*Lælia purpurea Niobe* (J. Cypher & Son).—A charming form, with bright rosy mauve sepals and petals, the lip deep purplish red, paler margin (award of merit).

*Odontoglossum vexillarium Princess May* (F. Sander & Co.).—An exceedingly pretty form, having large white flowers with a tinge of pink and yellow in the centre (award of merit).

*Odontoglossum Wattianum Hardy's var.* (F. Sander & Co.).—A showy form, with flowers borne on spikes about 2 feet in length. The sepals and petals are pale yellow, heavily blotched with chocolate. Lip whitish, also spotted brown (award of merit).

*Lælia purpurata nobilis* (F. Sander & Co.).—This is a grand variety. The flowers are large in size and richly coloured. The sepals and petals are rosy mauve on a white ground, the frontal portion of the lip being a deep crimson with a fainter edge. The throat is yellowish striped with brown (award of merit).

*Cattleya hybrida William Murray* (N. C. Cookson, Esq.).—This is a charming plant, and is the result of a cross between C. Mendelli and C. Lawrenceanum. The sepals and petals are of a rosy mauve shade, the lip being a rich magenta crimson with a white and lemon throat (first-class certificate).

*Cypripedium Volanteum giganteum* (Hugh Low & Co.).—This is a massive form of C. Volanteum. The dorsal sepal is green, as also is the centre of the petals, which are spotted brown and margined with pink (award of merit).

*Lælia purpurata atro-purpurea* (J. Cypher & Son).—This is a splendid form. The sepals and petals are pure white, the lip being of rich purplish crimson (award of merit).

*Cattleya Warneri formosa* (Charlesworth, Shuttleworth, & Co.).—A very fine variety. The sepals and petals are pinkish mauve, the lip being rich crimson with a white fimbriated edge (award of merit).

*Anthurium crystallinum fol. var.* (Pitcher & Manda).—This is a variegated foliage form of A. crystallinum. In a young condition half of each leaf is creamy white, the other portion being bright green blotched with cream. When well developed the leaf is more than a foot in length, and the variegation less conspicuous (first-class certificate).

*Anthurium Parisiente* (Sir Trevor Lawrence).—The spathes of this species are medium sized and of a pale salmon-pink shade (award of merit).

*Alocasia Sanderiana nobilis* (F. Sander & Co.).—This is a grand plant with noble foliage. The leaves on the plant staged were about 15 inches in length, and of a glaucous dark green shade, the whitish ribs and veins being most conspicuous. It will doubtless prove a useful addition to decorative stove plants, inasmuch as the foliage is of an attractive appearance. The illustration on page 439 depicts the character of the leaves (first-class certificate).

*Begonia Lady Brooke* (J. Laing & Son).—A double variety with well formed flowers of a salmon pink shade (award of merit).

*Begonia Lord Brooke* (J. Laing & Son).—A bright crimson double variety, the flowers being large and well formed (award of merit).

*Begonia Mrs. Regnarte* (J. Laing & Son).—A double variety, with excellent flowers of rich yellow shade (award of merit).

*Begonia Lady Llanngatcock* (H. Cannell & Son).—This is a splendid double variety, with large flattish rich crimson flowers (award of merit).

*Begonia Bexley Gem* (T. S. Ware).—A double variety, with pink flowers of a pretty tint (award of merit).

*Begonia elegans* (T. S. Ware).—A charming variety, with double flowers, pinkish tinge, the petals having fimbriated edges (award of merit).

*Gloxinia Netted Queen* (Sutton & Sons).—An exceedingly pretty variety. The flowers are large, upright, of a rich pink colour netted white (award of merit).

*Asplenium marginatum* (H. B. May).—This is an attractive Fern with long fronds of a bright green colour and bold pinnæ (first-class certificate).

*Cineraria maritima aurea variegata* (H. B. May).—This is a showy plant with rich-coloured foliage and stems. The leaves are green covered with a silvery gloss, and yellow edges (award of merit).

*Cineraria maritima variegata* (F. Sander & Co.).—This is apparently the same plant as was shown by Mr. May, and described above. Those exhibited by Messrs. F. Sander & Co. were, however, dwarfer in habit, and in this condition would be well adapted for bedding. The illustration on page 438 portrays the variegation on the foliage (award of merit).

*Nothochlæna mollis* (W. & J. Birkenhead).—A new dwarf-growing Fern, with small fronds and minute pinnæ (award of merit).

*Davallia fijiensis elegans* (W. & J. Birkenhead).—A graceful variety, with fronds about 18 inches in length, and small pinnæ (award of merit).

*Athyrium setigerum grandiceps* (W. & J. Birkenhead).—A pretty form with bright green cristated fronds (award of merit).

*Rhododendron Ariel* (J. Veitch & Sons).—This is a charming greenhouse species with sulphur yellow flowers (award of merit).

*Hybrid Sweet Briar Amy Roberts* (Keynes, Williams & Co.).—A charming hybrid with pink flowers of a medium size (award of merit).

*Amaryllis Lord Roberts* (B. S. Williams & Son).—A pretty variety with medium-sized flowers striped white and pink (award of merit).

*Dracæna Lord Wolseley* (B. S. Williams & Son).—A useful decorative variety with bronzy leaves margined red (award of merit).

*Carnation Mrs. Seymour Bouverie* (C. Blick).—A pretty variety, terra cotta shade, flushed carmine (award of merit).

*Carnation The Churchwarden* (C. Blick).—This is a seedling from Souvenir de la Malmaison; the flowers are large, red, and clove scented (award of merit).

*Polyanthus Queen Victoria* (J. Cocker & Sons).—This is a semi-double gold laced Polyanthus, with a rich orange centre (award of merit).

*Vallota purpurea var. delicata* (R. Veitch & Son).—A charming blush coloured variety of the well-known type V. purpurea. The flowers are medium in size (award of merit).

*Heimeroeallis Apricot* (G. Yeld, Esq.).—This is a pretty variety with apricot yellow flowers. It appears to be a profuse bloomer, and should prove a welcome addition to these hardy plants (award of merit).

*Caladium Mrs. Harry Veitch* (J. Laing & Son).—An attractive variety with large red leaves blotched with green and veined with dark red (award of merit).

*Caladium Ibis Rouge* (J. Laing & Sons).—A dull white ground with bright red veins (award of merit).

*Rose Carmine Rose* (G. Paul & Son).—A new single variety with bright carmine flowers about 3½ inches in diameter, exceedingly pretty in the bud (award of merit).

*Croton Thomsoni* (J. Laing & Son).—A useful decorative plant with yellow leaves blotched green, the young foliage having a very pale green shade (award of merit).

*Begonia Baron Schröder* (J. Laing & Son).—A double variety with bright orange scarlet flowers of fine form (award of merit).

*Delphinium John Thorpe* (Kelway & Son).—A double variety of exceptional merit; flowers rich purple shaded blue, inner petals white (award of merit).

*Primula Reidi* (G. F. Wilson, Esq.).—This is one of the most charming Primulas in cultivation, and by some growers is considered quite hardy. The plant exhibited, according to a statement shown with it, had been grown in the open border since 1886, and was taken up and put in a pan on the 23rd ult. The flowers are pure white, and delightfully fragrant. This Primula is deserving of extended culture. The small engraving on page 442 illustrates the bloom and leaf (first-class certificate).

#### THE SCOUNDREL SPARROW.

I AM obliged to "W. R. Raillem" for his note on page 393. I was inclined to adopt a theory frequently advanced, that it was thirst which caused the sparrow to seek for moisture among the buds and blooms of flowers and trees, and that in search of this it unavoidably caused some damage. In view, however, of your correspondent's statement that a stream of open water runs through his grounds I feel that we must abandon this theory, and fall back on the only possible one which occurs to me—viz., that the habits of the birds vary in different localities possibly from peculiarities of climate or food which we cannot properly understand.

I hope the time may not come when I shall be compelled to destroy the sparrows. When I purchased my present house and garden these birds were "in possession." This is now rather over nine years ago, and I cannot say that I see any increase in their numbers. They must emigrate, and it is to be hoped they carry their orderly manners to the land of their adoption, and be as considerate to their hosts as they have been to me. I do not "hold a brief" for the sparrow, and must admit that in many cases he eats a great quantity of Oats, especially in fields surrounded by high or badly kept hedges. Whether he properly pays for his damage to the Oats by the destruction of pests and seeds or buds of weeds may, however, be a moot question.

I do not in the slightest hint that "W. R. Raillem" is wrong in his crusade against the sparrows, as if I were as satisfied as he is that they do damage I should likewise reduce their numbers. I have found domestic pigeons do a great deal of damage to flowers and also to young Peas, and some starlings which have been attempting to evict the sparrows from their nesting places in a neighbouring garden have been detected using Primroses and green haulm of Potatoes in their nesting materials.—S. ARNOTT.

WILL Mr. Witherspoon (page 393) kindly take notice that when he speaks of what he has seen himself, he says, "These are stern unattackable facts;" but in alluding to my statement that I had seen sparrows plucking off Apple blossom, and should therefore declare war upon them, he says, "Whilst poking into the bloom truss to secure the snugly ensconced caterpillar, the sparrow has been seen to drop a stray petal, and he is not only to be censured, but he is to be utterly exterminated." (?) And will he also say whether he considers this a courteous way of conducting correspondence? My eyes have served me well in my observations of birds for nearly half a century, and I feel bound to defend them against such unwarrantable imputations.

Mr. Witherspoon uses the term "birds" several times in his letter; but of course there are birds and birds. Anyone cognisant of the



rudiments of ornithology, even if he had never seen or heard of a sparrow, would say at once if one were placed in his hand, from a glance at its beak, that it is a seed and vegetable feeder, just as he would say of the soft-billed birds that they are insectivorous. And now let me say something else which I have seen within the last few days, though it was no novelty to me, like the destruction of Apple blossoms. I saw a sparrow light on the shoot of a wall Rose, pick some aphides off, and feed a young one close by with them. Has the value of my eyes as witnesses risen in Mr. Witherspoon's estimation?

I have never denied or doubted that sparrows, and perhaps all birds, feed their young occasionally at least with insect or animal food. But, now look at the profit and loss view of the matter. The sparrow has stripped my Apple tree of blossom; he has also taken some aphides from my Rose tree, not stripped it by any means. The aphides will be as numerous as ever in a week. There will be no Apples this year, and no more blossom till next spring. Moreover, I could have removed the aphides myself if I had been anxious to do so. No earthly power can put the Apple blossom back on the tree.

As I said last week, we like to do what we can ourselves rather than leave it to Nature. We think we can do it with more discretion and more in accordance with our own particular views. As in thinning, so in the destruction of pests, Nature requires to be controlled. She may not be strong enough and so require help, or too strong and require to be repressed. I thought so yesterday morning, if I may use a homely illustration, when the man who came to clean my kitchen boiler said the pipes were choked and new ones must be put in, or the boiler might burst to the great danger of anyone near. I said "I think it must be done; it is unfortunately necessary that the cook should be occasionally 'blown up,' but—well, we like to do it ourselves. The operations of Nature are too violent and indiscriminate (I might be there myself!), and they must be controlled." He agreed with me.

But to return to our birds. As the graminivorous sparrow feeds its young occasionally with insect food, so the insectivorous birds will sometimes do considerable damage to soft fruit. The blackbird or thrush will eat impartially the slug and the Strawberry—the latter for choice, I fear. Starlings will eat Cherries; the blackcap warbler is very fond of Raspberries, so much so that he is locally called in some places the Raspberry eater; and, unkindest cut of all, the young robins of the year are certainly fond of Red Currants. What then? Does Mr. Witherspoon think that I am advocating the destruction of blackcaps and robins? Certainly not, this is not their natural food for the greater part of the year, nor will I spare the sparrow till his numbers are reasonably limited, because he takes a few aphides and caterpillars, which are not his natural food, during a month or so.

Man was put into the garden "to dress it and to keep it," and one of the prominent parts of his "keeping" I should think would be to recognise clearly the distinction between his friends and his foes, and not to encourage and harbour a number of graminivorous birds on purpose to keep down his insects, as I understand Mr. Witherspoon does, when other birds have been created and appointed for that very object.

It is well known that our highest authority on insect pests—Miss Ormerod—has declared against the sparrow. It is also generally known, I think, that the majority of insects and garden pests are winged in the perfect state, and celebrate their nuptials in the air; and that certain of our birds, the swallow and flycatcher tribes, spend their whole time in destroying them in the air, and (*pace* Mr. Witherspoon) do not "devour green food if within their reach."

Can the sparrow make up for his misdeeds in driving away the martin and appropriating his nest, by destroying a few dozen or score of caterpillars or grubs, when one parent insect devoured by the martin would represent so many more?

It is worthy of notice that the sparrow is getting worse; he did not to my knowledge, when I was a boy, destroy Gooseberry buds, pull off Primroses or Apple blossoms, or take martin's nests. I attribute his gradual growth in evil propensities entirely to his undue increase; and his increase to the doing away of sparrow clubs, and the prevalence in some parts of the general views of Mr. Witherspoon. It is also noticeable that it was soon after the time that sparrows had made martins much scarcer by driving them away that the present great increase of caterpillars on fruit trees commenced; but I make no charge where my eyes cannot prove it.

The sparrow is a parasite, not upon man's person but upon his property. Parasites upon other creatures' belongings are not unknown among birds, as witness the cuckoo, for instance. What is the use of the sparrow? I do not know; but then I do not know the use of certain other parasites. Parasites (as ichneumon flies) upon insects are no doubt meant to keep them down and prevent their undue increase. If sparrows are meant to keep down gardeners, then let the gardeners have fair play and fight for themselves. I object to the sparrow laying eggs upon me and eating me up; but Mr. Witherspoon need not fear extermination. The sparrow is smart, even in England, and no wonder that after a little education he has become smarter still among the Yankees. He will be a clever man who catches "the last one."—W. R. RAILLEM.

[Forty years ago the hordes of sparrows in a district denuded fruit bushes of their buds in spite of cotton (black and white), of soot and lime, and cats. They drove swallows and martins from their nests, and ruined yellow Crocuses, while in one particular instance an allotment holder had a rood of Wheat of fine promise; the sparrows devoured the whole of it, and the cottager had nothing but the straw for his winter store. They are gregarious, and need distributing. Our correspondent evidently has too many, and could spare some for Mr. Witherspoon.]

## MIDLAND COUNTIES PANSY SHOW AT TAMWORTH.

At the Exhibition, May 24th, there was a very fine display of blooms and the above date just suited the very early season, while the growers from Scotland were able to show well. Much interest was centred on the contest between the great growers from the north, especially in the class for forty-eight blooms of Fancy Pansies, dissimilar. There were five exhibits. Mr. A. Bailey, jun., florist, Sunderland, was placed first with excellent blooms of Beauty, a fine seedling; White Queen, very good; Evangeline, a rich flower of good form; Mrs. C. S. Scarse, Evelyn Bruce, A. H. Murray, Dr. Bostock, fine; William Mackie, James J. Irvine, Mrs. D. Johnstone, excellent; Tamworth Yellow, Mrs. J. Irvine, Bella Coutts, very fine; Maggie A. Scott, Archie Buchanan, Robert Jamieson, Nannie Scott, Walter Brown, Louise Weirter, Kate McArthur, Mrs. Train, Mrs. Mackie, Alexander Smith, Robert Lord, James Campbell, Miss Hudson, Norman McKenzie, Mrs. Thomas Ritchie, Edward Pollard, John Allen, excellent; William Allen, Mrs. Hugh Weir, very fine; Helen Patteson, James Simkins, a grand bloom; Mrs. Grossart, Wm. Archer, very fine; David Rennie, Neptune, white with a grand blotch; Duchess of Portland, Edith T. Crossley, Maggie McPhail, My Lady, Lord Hamilton, Lord Bute, seedlings, and others. Mr. John Smellie, florist, Bushey, Glasgow, was second with also a very fine stand, and a close competitor.

For twenty-four Fancy Pansies, dissimilar, Mr. Bailey was again first with David Rennie, Dr. Bostock, Maggie McPhail, Neptune, Wm. Archer, James Campbell, Mrs. S. C. Scarse, very fine; Betsy Kelly, Mrs. Train, fine; Donald Morrison, Mrs. Grosart, good; Mr. Lord, a new and very peculiar tint of colour, a grand blotch, with blue tinted margin to the lower petals, and blue violet top petals; Alexander Smith, Billy Johnstone, J. S. Irvine, White Queen, lilac-tinted top petals, with large solid blotch, and fine; James Simkins, extra fine; Archie Buchanan, Maggie A. Scott, Mrs. John Downie, and Edward Pollard, very fine. Mr. A. Lister, florist, Rothesay, second; and Mr. John Smellie, third. For twelve Fancy Pansies, open, Mr. Smellie was first; Mr. A. Campbell, Blantyre, second; Mr. Bailey, third.

The classes for Show Pansies were not so well filled, but for twenty-four Mr. Smellie was first, and Mr. Lister second; and for twelve blooms Mr. Lister was first; Mr. Campbell, second; Mr. Smellie, third. For six blooms of any one variety Mr. A. Irvine was first; Mr. Smellie, second; Mr. Bailey, third; and for twelve seedlings, own raising, Mr. Smellie was first; Mr. Lister, second; and Mr. J. D. Stuart, Malone, Belfast, third.

In the home counties' amateur classes Mr. Egginton, Wolverhampton, was first for twenty-four and eighteen Fancy Pansies, and Mr. A. C. Christic, Shifnal, another well-known grower, was second in each class, and Mr. T. M. Eglinton, third in each, with other growers fourth in each class.

For twelve and six Fancy Pansies Mr. George East, Leicester, was first, and Mr. W. B. Fowler, Tamworth, second; Mr. J. Haime, Longton, third, and Mr. John Draycott fourth; these winners in each class. There were also classes for Show Pansies and seedlings.

In the classes for amateurs who have never won a prize there were several exhibitors, Mr. H. Yeomans, Leicester, being first for twelve Fancies and second for six; Mr. Andrew Penson, Newport, Salop, second for twelve and first for six; and Mr. H. Jordan, Leicester, third in each class.

In the class for trade growers in the home counties Mr. William Sydenham, Tamworth, was first respectively for forty-eight and twenty-four blooms; and Messrs. Pope & Sons, Birmingham, second in each class. In these stands were the best varieties, and as especially fine were Emmie Stuart, Tamworth Yellow, Andrew Frater, Mrs. Train, Mrs. Wm. Sydenham, Mrs. J. D. Stuart, Mrs. Winstanley, Edward Pollard, Dr. Harrison (very fine), and Alexander Smellie. In the classes for twelve Fancy Pansies and six blooms of any one variety Mr. Sydenham was first and Messrs. Pope & Sons second, and Mr. Sydenham also staged a fine stand not for competition.

First-class certificates were awarded to the following seedling Fancy Pansies, three blooms of each.—Princess, creamy white, with a distinct even narrow margin of rosy crimson, quite even in the marking on each petal, solid blotch and fine form, exhibited by Mr. Campbell. To seedling Fancy Mrs. Spence, a very fine flower, exhibited by Mr. Andrew Irvine. To seedling Romeo, excellent, exhibited by Mr. J. Lister. To Marmion and Mrs. William Watson, two superb flowers, exhibited by Mr. J. Smellie. To Beauty, a grand flower of Donald Morrison type—a noble back row flower, exhibited by Mr. Bailey; and to Queen's Park Gem, superb blotch, the petals margined with creamy white, and a rich shade of blue, a grand flower, exhibited by Mr. Lister.

First-class certificates were also awarded to the following seedling Show Pansies:—John Walt, dark self, staged by Mr. Campbell; to W. H. Clark, a very fine yellow ground, exhibited by Mr. J. D. Stuart, Belfast; and to W. T. Bassett, dark self, by Mr. Lister.

Messrs. Dobbie & Son had an extensive show of Violas, and a first-class certificate was awarded for Lillie Langtry.

It was freely acknowledged to be a splendid exhibition of Pansies, and there was a large attendance, the Exhibition having been opened by the Mayor of Tamworth.

## WAKEFIELD AMATEUR TULIP SHOW.—MAY 22ND, 23RD.

AFTER passing through the inevitable vicissitudes of fashion, the florists' Tulip is now showing a decided reaction. We are informed that during the last two or three years there has been a greater demand for



standard varieties than stockholders are willing to part with. In no part of the United Kingdom has the fancy held on so tenaciously to the old love for this flower than has been the case in and around the city of Wakefield. Some of the growers pride themselves on the fact that as descendants of families which for three and four successive generations have grown and regularly exhibited their flowers.

It is without doubt a rare treat to be in at the judging of the flowers. The system of judging adopted gives the exhibitors a chance of thoroughly discussing and criticising the awards. As each class is adjudicated upon the winning flowers are taken into another room, and in their order of merit with their names are entered into the Secretary's book, and thus valuable and interesting record of the winners has been kept during the fifty odd years the Society has been in existence. The exhibitors sitting around the table, every interesting point and detail in connection with the flowers are freely discussed, and a novice would be amazed to find so much friendly rivalry and enjoyment derived by those who are placed low down on the list of winners, in the fact that the beauty and good points of a flower are more to them than the actual money value of the prizes.

Some of the exhibitors grow large beds containing thousands of plants, and the displays of bloom attract many visitors to view a short-lived but wonderfully gorgeous sight. The merits of the flowers can be discussed with the cultivator. It may be that he is a Knight of St. Crispin, or has for his coat of arms a "Goose and Shears;" and few of them but are able between whiles to hold a discussion on politics or give a lesson in political economy. One knight of the lapstone maketh to himself a very wilderness of Tulips, wherein during the blooming period he may at all times be found, including worktime, bedtime, and Sundays, mostly on his knees, searching for the budding charms of his Queen of the May, or lamenting the faded beauty of his Heroine. It may be that Mary Jackson's and Annie McGregor's toilet in matters of feathers and paint have not shown their usual good taste; yet so confident is he that on points of form and clearness of complexion he is ready to stake his throne (cobbler's stool) and sceptre (hammer and lapstone) for the remainder of the year (they are no use to him during the blooming period).

Of course, when the exhibition day comes round and the Judges' fiat has gone forth, everyone takes both their victories and defeats in the best possible spirit, yet vow vengeance on each other in the year to come. This year the awards are as below.

**RECTIFIED TULIPS**, pan of six.—First, Mr. William Mellor, with Sir J. Paxton, Lord F. Cavendish, George Hardwick, Mary Jackson, Industry, and Dauntless. Second, Mr. Edward Lister, with Sir J. Paxton, George Hardwick, Queen of the May, Parker's King, Annie McGregor, Mrs. Lee. Third, Mr. George Gill, with Sir J. Paxton, Garibaldi, Queen of the May, Sylvester, Mabel, Heroine. Fourth, Mr. A. Moorhouse. Fifth, Mr. W. Calvert. Sixth, Mr. H. Brown. Seventh, Mr. J. Hardwick. Eighth, Mr. Thomas Maddock.

**SIX BREEDER TULIPS**.—First, Mr. A. Moorhouse, with Sir J. Paxton, Dr. Hardy, Talisman, Bridesmaid, Mabel, Miss Burdett Coutts. Second, Mr. W. Calvert, with Sir J. Paxton, Miss Collins, Richard Yates, Duchess of Sutherland, Industry, Sylvester. Third, Mr. W. Mellor, with Sir J. Paxton, Bridesmaid, Hardwick, Talisman, Rose Hill, Annie McGregor. Fourth, Mr. George Gill. Fifth, Mr. George Hardwick. Sixth, Mr. Edward Lister.

**THREE BREEDER TULIPS**.—First, Mr. W. Mellor, with Sir J. Paxton, Miss B. Coutts, Hardwick. Second, Mr. A. Moorhouse, with Dr. Hardy, Bridesmaid, Miss B. Coutts. Third, Mr. W. Calvert, with Sir J. Paxton, Hepworth, Agnes Strickland. Fourth, Mr. Geo. Gill. Fifth, Mr. Ed. Lister. Sixth, Mr. T. Maddock. Seventh, Mr. J. Lister. Eighth, Mr. H. Brown.

**FLAMED BIZARRE TULIP**.—First and second, Mr. W. Mellor, Dr. Hardy, and Sir J. Paxton. Third, Mr. E. Lister, with Sir J. Paxton.

**FEATHER BIZARRES**.—First, Mr. A. Moorhouse, with Masterpiece. Second, Mr. W. Mellor, Sir J. Paxton. Third, Mr. Geo. Gill, unknown.

**FLAMED BYBLÆMENS**.—First and second, Mr. W. Mellor, with Talisman and Lord Denman. Third, Mr. A. Moorhouse, Queen of May.

**FEATHERED BYBLÆMENS**.—First, Mr. A. Moorhouse, with Bessie. Second and third, Mr. W. Mellor, Queen of May and Geo. Hardwick.

**FEATHERED ROSES**.—First, Mr. W. Mellor, with Mrs. Lee. Second, Mr. T. Maddock, Aglaia. Third, Mr. W. Mellor, Mrs. Lee.

**BIZARRE BREEDERS**.—First, Mr. A. Moorhouse, with Dr. Hardy. Second and third, Mr. W. Mellor, Sir J. Paxton.

**BYBLÆMEN BREEDERS**.—First, Mr. Geo. Gill, with Geo. Hardwick. Second, Mr. A. Moorhouse, Bridesmaid. Third, Mr. J. Hardwick, Sylvester.

**ROSE BREEDERS**.—First and second, Mr. Geo. Gill, with Thos. Parker. Third, Mr. W. Mellor, Industry.

**PREMIER FLOWERS**.—Flamed, Mr. Wm. Mellor, with Mary Jackson. Feathered, Mr. W. Mellor, Lord F. Cavendish. Breeder, Mr. W. Calvert, Miss Collins.

#### TRADE CATALOGUES RECEIVED.

William Bull, King's Road, Chelsea.—*New and Rare Plants and Orchids.*

Eden, Fisher & Co., 50, Lombard Street, E.C.—*The Country Gentleman's Catalogue.*

Friedrich Adolph Haage, jun., Erfurt, Germany.—*Catalogue of Cacti.*

J. Laing & Sons, Forest Hill, S.E.—*Tuberous Begonias.*

J. Peed & Sons, Roupell Park Nurseries, Norwood Road.—*Stove and Greenhouse Plants and Caladiums.*



#### HARDY FRUIT GARDEN.

**General Summer Treatment.**—The process of disbudding will have ridded fruit trees of much useless, gross, and unnecessary wood. If not removed this would have crowded the legitimate growths wanted to furnish the trees with a sufficient quantity of wood both for future bearing and extension. Disbudding is now impracticable in cases where removal of wood is needed, except with gross soft growths that start away from old wood. This can easily be rubbed off at any time if not wanted, but woody growths must be cut off with the knife. Gross, attenuated, or ill-placed shoots are not always apparent at the early examinations of the trees, and it is well throughout the season to keep watch on the advancing growths during the frequent visits and close scrutinies made. Removals of growth effected at intervals and in small quantities are better for the trees. Thinning wholesale at any time is opposed to their well being.

**Securing Growth.**—The proper securing of reserved shoots on wall trees must be attended to, not only to preserve them from injury by breakage from wind or other causes, but to prevent them shading each other unduly, as well as to preserve an equal balance of neatly trained growths. Very close or tight tying or nailing-in near the extremities is not essential; but it is well to incline the wood retained in the direction it will ultimately take.

**Thinning Fruit.**—Remove more fruit from crowded trusses and clusters of Strawberries, Plums, Apples, Pears, and Cherries, as soon as the majority reach the size of Hazel Nuts. Fruits not swelling on any trees owing to imperfect fertilisation clear away as soon as possible. Fine examples can only be obtained by judicious thinning. For general purposes more fruit may be left with advantage, but do not overburden the trees, the perfecting of a heavy crop being a great strain upon them, and likely, if overdone, to jeopardise the following year's chances. Green Gooseberries may be freely thinned for culinary purposes, enough being retained if desired for swelling to a large size and ripening as dessert fruit.

**Netting Strawberries.**—Strawberries have been much benefited by the recent rains, and with the aid of liquid manure or the nutriment from the mulching material the fruits are now swelling well, and will quickly change colour. Birds often then become troublesome, spoiling the best fruits. To preserve these from attack cover the beds with nets. Affix forked stakes at the ends of rows and at intervals along them to support strong laths, over which nets of sufficiently close mesh can be thrown clear of the plants. Make the ends and sides secure to prevent the entrance of birds underneath, and the fruit will be safe. Tared string strained tightly to stakes fulfils the same purpose as laths laid across, and is neater in appearance. In some cases the nets laid over the plants are sufficient.

**Summer Pruning.**—The breastwood or foreright shoots on wall trees, pyramids, espaliers, and other forms of restricted trees should during the following weeks be dealt with. It is best to commence pinching when four to six full sized lower leaves have been formed. These are then fully capable of elaborating the sap for feeding the basal buds, which then soon become converted into fruit buds. This early season the leaves referred to are, or fast becoming, full sized. Commence with reducing the shoots belonging to Apples and Pears, dealing first with the upper and strongest parts of trees. The opportunity is then given of weaker shoots extending and strengthening a short time longer. Summer pruning is always best done progressively, no check then being given to trees by the removal of large quantities of wood and foliage at one time. If the result of the summer pruning has such an effect that it pushes the lower buds of the shortened shoots into growth during the current season it fails of its object, which should be rather that of feeding the buds in question by concentrating the sap upon them, so that they may form fruiting spurs. Take care when counting the proper number of leaves to retain, not to include the small basal leaves. In a short time fresh growths will push from the extremities, and when the first formed leaf on each has developed to nearly its full size shorten the growth just above it, continuing to do this as often as fresh shoots form.

**Plums and Cherries.**—The shoots on wall trees which are not laid in as extensions or to fill up vacancies are shortened to the fourth or fifth leaves, which in these fruits include the small basal leaves. If space does not allow of reserved shoots being properly laid in without crowding, stop them also near the point where they intercross others. Many of them, however, could be trained full length over bare portions of main branches. Plum and Cherry shoots are often infested with aphides at the extremities. Summer pruning will rid the trees of much of this, but those shoots which are infested and there is no intention of shortening them should be dipped in some insecticide.

**Red and White Currants.**—These often have the extreme points of new growth seriously infested with aphides. They are more troublesome to trees where the growth is checked by dryness at the roots or the soil lacks nutriment. At the present time such infested tips of shoots may be promptly removed and burnt, leaving three pairs



of full-grown leaves. Where the roots are suspected of being largely in a dry medium, which is often the case when trees trained to walls or bushes in the open have existed long on one site, means must be taken to moisten the ground, first with copious supplies of clear water, afterwards with liquid manure, followed by a mulching of manure. This will be advantageous to the rapid swelling of the bunches of fruit, and to the production of clean healthy growth.

**Gooseberries.**—Trained on restrictive methods in any position, these will now need the summer shoots shortening in the same manner as Currants. Aphides are often very troublesome at the points of Gooseberry shoots, being produced by the same causes which favour their presence on other trees. Pruning the side shoots will clear the trees to a large extent, any infested shoots left dust with tobacco powder. Improve the growth by applying water and liquid manure. Free-grown bushes should have gross and crowded wood thinned out. Many of the branches as they are cleared of fruit may be cut out entirely to make room for new wood of the current year.

#### FRUIT FORCING.

**Pines.**—*Potting Suckers.*—The early-fruited plants of Queens and Enville will afford strong suckers as they finish, and if these be taken during the first fortnight of June in sufficient quantity to maintain the stock equal to the demand for fruit and are started at once, they will give plants for fruiting about this time next year, following those started into fruit in the spring. The treatment then given to suckers will answer for these, only they will require more careful shading and frequent attention to damping.

*Spring-potted Suckers.*—The strongest of those potted last March will be in the pots in which they are to fruit; if not, they must be shifted without further delay. To allow them to become root-bound is debilitating and detrimental to them. Recently potted plants should have a steady bottom heat of 85° to 90°, be thoroughly watered after potting if the soil be dry.

*Ventilating, Watering, Syringing, and Shading.*—Young plants are making rapid progress, and should be allowed sufficient space for development. Ventilate early in the day at 75° to 80° to dissipate moisture from the leaves before it is powerfully acted upon by the sun. That is the way to secure sturdy plants as well as avoid scorching. Examine the plants twice a week for watering, not giving any until it is needed, and then a thorough soaking with tepid liquid manure, being careful not to apply it too strong. Discontinue shading succession plants so soon as they will bear the sun safely, but fruiting plants with the crowns in close proximity to the glass will require slight shade. Syringe the plants on bright afternoons, and otherwise maintain a genial condition of the atmosphere. Avoid, however, much moisture in dull weather, for it only tends to cause attenuated and soft growth. Where water remains in the axils of the leaves syringing is not so much required, and in watering pour the water well up the plants, but not into their centres.

*Plants for Winter Fruiting.*—The strongest of the plants ought now to be showing fruit, if not, means must be taken to effect it. The plants should be brought together and subjected to a comparative rest for a month or six weeks, lowering the heat at the roots to 75°, maintaining a free circulation of air about the plants in favourable weather. Ventilate at 75°, and allow the heat to fall to that point before closing the house. Only employ artificial heat to prevent the temperature falling below 60° at night. Do not withhold water altogether, but when a plant becomes dry afford it liberally. Suckers that were wintered in 7 or 8-inch pots, and repotted this spring, must be kept growing until the pots are well filled with roots, at which time, if considered necessary, they may be subjected to the same treatment as advised for the larger plants, and they will then give a successional supply of fruit.

*Fruit Ripening.*—Cease syringing the plants and lessen the supply of moisture, but the watering at the roots must be sufficient to prevent distress in the foliage. Ventilate when circumstances permit with a view to improve the quality of the fruit, but do not allow the temperature to fall below 80° in the day, and apply fire heat to maintain a night temperature of 70° to 75°. Queen, Enville, and Providence Pines started into fruit early in February will ripen this month, coming in about a month before Smooth-leaved Cayenne and Charlotte Rothschild started at the same time and under similar conditions. These afford a supply of fruit in succession, and it may be still further extended by removing some of the plants with the fruits to a cooler house. The heat should be maintained at 85° to 90° at the roots.

**Figs.**—*Early Forced Trees.*—Trees in pots must be mulched with rich material, and receive generous treatment to enable them to swell the second crop of fruit, supplying liquid manure once or twice a day. Planted out trees require water once or twice a week, according to the extent of the rooting area, affording liquid manure or top-dressings of rich material in accordance with the needs of the trees. The second crop should be thinned before the fruit is the size of Walnuts, and in thinning reserve the largest fruits at the base of the shoots. Syringe twice a day to keep red spider in check, and, if necessary, apply an insecticide, removing scale with a brush, taking care not to damage the young fruit, or it will be seriously disfigured.

*Succession Houses.*—When the fruit gives the least indication of ripening, syringing the trees must be discontinued. If red spider attack the foliage the fruit should be gathered closely and a good syringing given, which will not injure the fruit provided it is done early on a fine day. A free circulation of warm dry air should be afforded, which is essential to high quality, but the atmosphere must not be arid or the foliage will

suffer, and moderate moisture will not damage the fruit provided a circulation of air is maintained and the Figs not wetted. Afford the fruit the benefit of all the light practicable, tying-in and regulating the shoots by thinning and stopping. Trees swelling their crops will require syringing twice a day, copious supplies of water or liquid manure at the roots, and a genial atmosphere.

*Young Trees in Pots for Next Year's Early Forcing.*—These should be of varieties that afford good results in their first crops, as St. John's, Angélique, Early Violet (which have small fruit), Brown Turkey and White Marseilles—the two best Figs for general culture, and they must not be neglected or disappointment is inevitable. They must have all the light possible and be kept as near the glass as practicable without touching, so as to secure sturdy well ripened growth, and pinching should not be practised to a late period, otherwise the shoots will not mature sufficiently to carry a first crop of fruit. The foliage must be kept clean, and liquid manure supplied so as to secure stout but not gross growth. When the growth is complete the trees may be stood outdoors to induce rest, but the wood should be well ripened previously, and to be of use for early forcing it must be matured early.

**Peaches and Nectarines.**—*Early Forced Trees.*—The fruit being all gathered from the very early varieties the wood on which the Peaches and Nectarines have been borne and not being extensions should be cut out. This will admit more light and air to the shoots which are to afford fruit next season, and allow of the better cleansing of the trees, which should have a good washing with water from the syringe or garden engine, or if insects have obtained a footing they must be destroyed by some approved insecticide. Daily syringing will be necessary to keep the foliage clean. Admit air freely so as to maintain the foliage in good condition as long as practicable. The roof lights should not be removed until the wood is matured and the buds fairly formed, but this matter must be attended to at no distant period with a view to prevent overdevelopment of the buds and early casting of the foliage. Supply water or liquid manure to the roots so as to maintain the soil in a thoroughly moist condition, and a light mulching will keep the roots active at the surface provided it is kept moist.

*Second Early House.*—Admit plenty of air to the ripening fruit in the daytime, and at night also if a prolonged succession of fruit is required. Remove any leaves that shade the fruit too much, so that it may colour and ripen evenly. No artificial heat will now be necessary except in dull weather, when a little may be employed to permit a free circulation of air where the fruit is ripening, and syringing must cease with the first indication of ripening. Maintain a genial atmosphere by damping available surfaces when they become dry. The borders must be kept in a thoroughly moist state, and be supplied with nourishment after the fruit is gathered, so as to keep the foliage healthy as long as possible. Cut away the wood which carried the fruit to the shoot at the base for next year's fruiting after the crop is cleared, excepting those needful for the extension of the trees. If the trees are too full of wood thin well so as to admit light and air to the shoots, and thereby ensure the thorough ripening of the wood.

*Succession Houses.*—The trees will need attention in regulating the growth, extensions being trained in their full length where space admits, and pinching laterals to each joint of growth as made. Shoots trained in from last year's extensions at 12 to 15 inches apart may be stopped at those lengths, also shoots from the base of those now bearing if they are likely to exceed that extent of growth, keeping the laterals well pinched. Growths retained to attract the sap to the fruit will require pinching at each leaf after the first stopping at three good leaves. The fruit taking its last swelling should be well exposed to the light, drawing the leaves aside, shortening or removing them, and raising the depending fruits on laths with their apexes to the light. Early ventilation saves the foliage from scorching, and early closing with plenty of moisture accelerates the swelling of the fruits. Fruit stoning must not be hurried, 60° to 65° being sufficiently high by artificial means in the daytime, and the temperature may fall to 55° at night. When the fruit has stoned the final thinning should be effected without delay. Keep the trees well supplied with water or liquid manure at the roots, and the foliage clean and healthy by syringing.

*Late Houses.*—Disbudding will now be completed, and the tying-in of the young shoots attended to. Thinning the fruit also will be finished, no more fruits being left for the crop than a few to meet casualties in stoning. Early and free ventilation on all favourable occasions will be the order of the day, along with early closing and syringing morning and afternoon. If aphides appear destroy them by repeated moderate fumigation when the foliage is dry. Red spider and thrips have little chance where syringing is properly done. If mildew appear dust with flowers of sulphur, rubbing it on the white specks if any are seen on the fruit, or syringe with a solution of softsoap, 2 ozs. to the gallon of water, with a tablespoonful of sulphur added.

#### THE FLOWER GARDEN.

**Late Planting.**—Some soils have become so very dry and difficult to remoisten, and rains have not been nearly so heavy in some parts as in others, and it is possible that many flower beds and borders, more especially the odd corners, are in a far too dry state for the reception of plants. To make matters worse, the plants that have to be put out in the positions last filled are of poor quality—the best have been used first. What are wanted, therefore, are conditions favourable to a good start rather than otherwise, and the makeshift arrangements may then eventually eclipse some of the more formally arranged beds. Dry soils ought to have one or two thorough soakings of water before the planting



is done, as it will be next to impossible to properly moisten them afterwards. Odd corners should have a liberal dressing of either decayed manure, thoroughly decomposed vegetable refuse, including lawn grass and leaves, or leaf soil forked-in.

In soils thus lightened and enriched quite a variety of greenhouse plants might be planted with the best results. Plants of Abutilons, Zonal Pelargoniums, Plumbago capensis, Heliotropes, Fuchsias, fibrous and tuberous-rooted Begonias, with Nicotiana, herbaceous Lobelias, Celosias, Hedychiums, Erythrinas, Lilium auratum, Cannas, Palms, variegated Maize, Marguerites, and such like mixed and arranged according to their respective heights and habits of growth, and given the benefit of a fairly rich root run, would soon be effective, remaining so to the end of the season. Plants being scarce, quite large old Zonal Pelargoniums may be used for filling beds, but they need to be planted in a sloping direction, and kept evenly spread out and pegged down. All large as well as small plants should be in a thoroughly moist state at the roots when turned, and where the soil is somewhat sour and unoccupied with roots much of this ought to be forked away prior to planting. Make the fresh soil somewhat firm about them, and plant deep enough to admit of a basin being formed for holding water about each stem. For the first three weeks or more they must be kept well supplied with water, as should the old ball of soil and roots once become dust-dry before strong fresh roots have spread into the new soil there will be no remoistening it, and the plants will do badly accordingly. If Iresines, Coleuses, Alternantheras, and such like very tender plants are planted on or about June 10th, that will be quite early enough for very many places.

**Annuals.**—Those sown in the open did not germinate well when they were expected to, but many have started since the change in the weather. As a rule, the majority are grown far too thickly. When each plant receives good room all branch strongly and form finer flowers, and give a much longer succession accordingly. Especially ought Poppies to be freely thinned out. Left as thickly as they come up the display will be very fleeting indeed. Thin out the larger Japanese and French varieties to about 1 foot asunder, and remove the seed pods as fast as they form, thereby considerably prolonging the display. The popular Shirley Poppies should be thinned to about 9 inches apart, another 3 inches being none too much on good soils. Cut the flowers freely for vases when quite young, and gather what seed pods form. If more seed is sown on moist ground at once a good autumn display will most probably be had. Mignonette again ought to have plenty of room. Isolated plants always give much the finest and the longest succession of flower spikes; therefore thin to about 1 foot apart.

Candytufts, Eschscholtzias, Love-lies-bleeding, Nasturtiums, Cornflowers, Marigolds, Chrysanthemums, Convolvuluses, all branch or spread considerably if given good room, and should be thinned to not less than 10 inches asunder, while if they are sown in patches reduce the number of plants to five or six in each. Clarkias, Coreopsis, Godetias, Linaria, Malope, Nemophila, Virginia Stock, and Eranthemums as a rule do not spread greatly, and may therefore be left rather more thickly in the lines or patches. If any transplanting is done let it be as much as possible with a trowel, outside plants being moved with a little ball of soil about the roots, taken straight to where they are to be replanted, and watered directly they are in their fresh quarters. Ornamental Grasses ought certainly to be freely thinned out, and these may also be transplanted. Sunflowers should be thinned out according to the habit of the varieties. Those which naturally grow tall should be thinned to about 3 feet apart, and they will then branch strongly and flower grandly. The miniature variety may be left much closer together, these being planted or thinned to about 1 foot apart.

**Sweet Peas.**—These have come up thickly, and were left to grow unthinned, the display is not likely to last long. In most cases it is now too late to thin out, and more seed should be sown at once if flowers are wanted late in the summer or autumn. When grown thinly, or not less than 4 inches apart in the rows, and better still if planted out from pots in patches of about five plants and well isolated, ordinary Pea sticks being placed to the plants in each case, they grow and branch vigorously. Being watered freely in hot dry weather, and the bulk of the flowers cut or the seed pods removed frequently, these well-treated Peas will usually continue to produce fine flowers till frost intervene.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### PAINTING HIVES.

A CORRESPONDENT asks if there is any objection to painting hives inside. Coal tar is better adapted for the inside of hives than ordinary oil paints. It (or creosote) penetrates the pores of the wood without closing them as oil paints do, and evaporation through the walls of the hive is desirable for the health and preservation of bees. Painting the inside of hives and solid floors would be destructive to bees during winter. There is nothing else so fatal to bees as damp floors. For the purpose of preserving my double-cased hives from decay I was compelled to tar them inside, and it did no injury whatever to the bees. The most serviceable and

economical hives are single-cased ones, protected outside by some non-conducting material that allows the perspiration to pass off. No hive should have its walls thicker than five-eighths of an inch, and yellow pine is the best material to use in making them.

#### SEALED COVERS OR ABSORBENTS.

These have been engaging the minds of bee-keepers of this country and America. Tarred paper was recommended by one "expert," but proved, as I anticipated, a failure. It is true some cases of success are reported, but the majority are pronounced failures. Neither sealed covers nor absorbents are proper materials to use. Non-conducting but porous material, as stated above, will defy the harshest winter ever experienced in this country. A Hull lady bee-keeper, but still a novice, acted wisely in pricking holes in the enamelled cover of a hive constructed according to the wisdom of our modern sages and bee-keepers.

#### TWO QUEENS IN ONE HIVE.

Much nonsense has been written in connection with this ancient practice—as queenless and eggless hives raising queens, shifting eggs from one cell to another, and queens depositing eggs in royal cells. The case that occurred in my apiary (July, 1892) was in itself sufficient without further evidence (even if there had been no other) to prove that there is design in fertile workers being in the hive with an unfertilised queen. We have repeatedly had queens twelve weeks old before they mated. This gives ample time for the progeny of fertile workers to be fully matured and fit for mating should there be no other drones in the neighbourhood. This wise provision of Nature has mystified bee-keepers and encouraged error to a great extent, but has within our knowledge in not a few cases saved the colony, whose fate would otherwise have been doomed.

#### FEEDING AND SUPERING.

Now is the time to be watchful that stocks do not suffer by egg-eating and brood drawing. Two ozs. to 4 ozs. of dissolved sugar every night during the barren honey season will keep things straight, and tin scoops are the best feeders. Supers should now be put on all hives, whether intended as swarmers or non-swarmers.

#### SPARROWS AND BEES.

Sparrows are fond of the immature grubs of drones. Owing to this taste and the sparrow's tameness I was deprived of a fine specimen of a drone reared in a queen cell. When opening some cells I observed a peculiar formation on one of the drones, being finer in appearance, and showing signs of alteration of structure of the legs. I laid it down unprotected until I had adjusted the hive, but the "scoundrel sparrow" swallowed him, and so I was deprived of making an interesting examination.—A LANARKSHIRE BEE-KEEPER.



## TO CORRESPONDENTS

\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Tomato Disease (E. H. R.).**—The fragment of leaf sent is wholly insufficient. The paper had deprived it of moisture, and the letter stamp smashed the tissue into fragments. If you will send one or two entire leaves and the points of any affected shoots in a small box, to reach us on Saturday if possible, they will be subjected to careful examination.

**Royal Horticultural Society's Meetings (J. A.).**—Meetings will be held on June 6th and 20th; July 11th (at Chiswick), and 25th; August 8th and 29th, the last-named in connection with the great show in the Agricultural Hall, Islington. Those dates will perhaps be





IT would appear that the days for sensational prices are over, never to return. Nor, personally, do I much regret this so long as the returns are remunerative. Nothing is more demoralising to the market grower than the sudden fluctuations consequent upon a short scarcity of any particular kind of perishable commodity. For instance, when forced Strawberries were quoted at say 1s. per oz., and the next day dropped to about half that figure, this vexed the grower far more than if the commencement had been nearer 10s. per lb., and they remained longer about that price. After learning that certain fruits are in great demand and the prices extremely high, the grower naturally reckons upon at least a short run of good returns, only to find that nothing of the sort is likely to occur. Unless he has had some previous experience and knows better, the first conclusion arrived at is that there is "something rotten in the state of Denmark," or in other words, that the salesman he patronises is little short of being a swindler. This latter conclusion is, I am afraid, too often indulged in by disappointed growers; more especially by those without much experience to guide them in their decision.

Because the prices returned do not exactly agree with those just previously obtained, or do not correspond closely with what the grower thinks ought to prevail, salesmen are forthwith "called over the coals." But are they all rogues? Are any of the well established salesmen in Covent Garden, or other leading markets, swindlers? I reply that no one dare impugn their business practices, and will go further and assert that they do their best for their clients, and not unfrequently at a loss to themselves. In order to be able to speak with any authority in the matter of either condemning or praising the salesmen, senders should attend the markets occasionally and judge for themselves what is going on. According to my experience, gleaned at all hours in Covent Garden, and all night and day long in the Spitalfields and Borough Markets, prices vary surprisingly in one morning. At the outset good prices may prevail, and a short time after, for the business is transacted very quickly, the same class of goods can scarcely be given away. Naturally this lowers the average materially and makes it very hard for the salesmen to regulate the returns to the senders. That the best of them do the latter honestly and fairly there is no disputing. When they get good clients they like to keep them on the books, and this would be impossible if trickery was resorted to often, the sender easily testing the honesty of one salesman by consigning similar packages to other salesmen in the same market.

Whether the prices shall be good or not is largely determined by the sender, always supposing there is no great glut and slack demand on any particular morning. If no pains are taken in sorting or grading the wares, or in the packing of the same, low prices are almost inevitable. Mixing up what should be sorted into firsts and seconds is a senseless proceeding, as it invariably results in either medium or low prices being returned for the lot. Take Peaches for instance. If the very best—that is to say, large, highly coloured, sound fruit—are placed in one package and the second quality in another, 18s. per dozen may be returned for the former and 6s. for the latter, this bringing the whole up to the respectable average of 12s. per dozen, whereas if all had been mixed the average would be nearer 8s. per dozen, with the risk of still lower figures being

reached. Senders should also bear in mind that dead ripe fruit travels and keeps badly, and then salesmen cannot possibly obtain high prices; but on the contrary, seeing that they are more often thrown away than sold, the chances are a few over-ripe or damaged fruit will bring the average down very low indeed. Inferior fruit again is altogether out of place in high-class markets, and not unfrequently is either given away or sold at a loss. The senders, not the salesmen, are to blame for these occurrences. In the first place the former—that is to say, the grower—should strive to grow superior produce as much as possible, a comparatively light crop of extra fine fruit paying well at all times, while heavy crops of inferior fruit may not pay for gathering and sending even. Let the Channel Islanders have a monopoly of the markets as far as inferior Grapes are concerned, while foreigners who think to swamp English growers with various other kinds of fruit can easily be taught a lesson if only the latter could be persuaded to place nothing but the best against them. In each and every case the greatest pains, this not necessarily or advisedly amounting to coddling, should be taken with the packing, faulty packing quite spoiling the averages in many cases. "Topping up," or putting a few good fruit on rubbish, deceives nobody other than "greenhorns."

Private gardeners for many years past have consigned much surplus produce to the markets, and it is this class of growers that have suffered most from the general reduction in prices. Whatever may be said or thought to the contrary they are, I maintain, quite at a disadvantage with us wholesale or professional market growers. Not only have they as a rule an inferior—that is to say, an unsuitable class of houses to deal with, but they are also heavily handicapped in various other ways. Market growers have large, well heated, properly glazed structures, wholly or principally devoted to the purpose for which they are constructed, and are at liberty to send the best as well as the inferior produce to the markets. They send large and good consignments regularly, and it is not in human nature for salesmen to be other than partial to them. I mean partial in this sense—if any favour is shown to any class of senders it must be to those who are the best consigners and make fewer mistakes in sorting and sending. Private gardeners as a rule are not in a position to send other than in a fitful fashion, and more often than not the best samples have to go to the tables of the owners, and yet the seconds are expected to realise the highest prices in the markets.

Complaints are sometimes made of the incorrectness of the market quotations given every week in the different horticultural papers, and in some few cases, but only very few, is there some cause for grumbling. As far as my experience goes the figures given are most trustworthy, and so they are to others who have had similar experience of markets and their fluctuations. A fair average is struck, the very lowest and a few extremely high figures not being given. Moderate as are the quotations they are yet not unfrequently higher than the returns, and an explanation of this fact will be gathered from my preceding remarks.

A favourite practice of some owners of gardens is to visit some of the leading shops in Covent Garden Market as well as those in the more fashionable parts of the Metropolis, and there price different kinds of home-grown fruit on sale. Because somewhat high prices are asked they jump to the conclusion that their surplus produce ought to realise equally good money, quite overlooking the fact that there is a great difference between wholesale and retail prices, high rents, probable losses and other considerations also largely affecting the case. Nor are owners of gardens, or indeed many gardeners, capable of properly comparing what they have on their trees or Vines with what they see in a large shop. They are apt to imagine that their "geese are all swans," or, in other words, they very much over-rate their own produce. Let them send their best to a large shop and recognise it afterwards if they can. It is astonishing how much of the fruit that is taken either to a show or



a large shop where much other fruit is placed alongside seems to lose in size, and what a grower may think extra fine would perhaps be considered only moderately good by salesmen and fruiterers. My advice, therefore, to growers in a small way is to accept the quotations given as correct, and be also guided by them when fixing the prices of anything sold locally. I would also strongly advise private growers to sell as much as possible of their second-rate produce in the locality where it is grown, for it is very certain it does not pay nearly so well to consign it to Covent Garden or other important centres.—MARKET GROWER.

### OTHER LANDS.

In resuming this subject, we may state that California and Oregon, together with Washington and Nevada, form the Pacific States, or those lying between the outer range of the Rocky Mountains system and the Pacific Ocean. This range bears the name of "the Sierras" in California and "the Cascades" in Oregon. Owing to the interposition of these mountains, the Pacific Slope enjoys an immunity from the severe cold and blizzards which afflict the prairie States to the east, while a warm current, similar to our Gulf Stream, sweeping round from the direction of Japan, appreciably tempers the climate. Hence places on the Pacific Slope have a much higher average temperature and a more equable climate than those in the Eastern States lying upon the same latitude, just as Edinburgh differs in these respects from St. Petersburg or Moscow. Not more than once in a generation does snow fall upon the lowlands of Northern California, though it is more frequent in Oregon. Oregon, like California, can boast of having several zones of climate, in consequence of the Cascade range dividing her into two geographically distinct portions. The maritime or western portion enjoys an insular climate, somewhat like our own, while that of the tra-montane district is more continental and extreme. It is intelligible, then, that as the capacities of Oregon come to be better understood, California will not seem to possess such an extraordinary advantage over her sister State, whose development has received no stimulation from the gold fever. This has given a sort of prematurity to everything about California, and a spirit of boastfulness and speculation to her population.

The State of Washington across the Columbia River, the northern boundary of Oregon, came very near to forming part of the Canadian Dominion. Fifty years ago, when the delimitation of the frontier was in discussion between the English and American governments, the line of the Columbia was proposed, and it looked as if the suggestion would be accepted, but the gorge of the Jefferson Bricks of that day rose at this concession to the "blasted Britisher," and the journals took to inflaming public opinion in the United States with the alliterative catch word "fifty-four forty (*i.e.*, degree of latitude), or fight." It being a period when the colonies were at a discount, and the British Lion was not feeling particularly land-hungry, Uncle Sam managed to get the frontier line fixed at several degrees north of Columbia, and thus much territory was yielded by England which now is included in the younger Western States. It was over much of this country that the Hudson Bay Company possessed the right of trading and trapping, and near Portland in Oregon, at a place called Astoria, stood one of their forts. In books, now neglected for works on more newly opened lands, we read of the wild life which went on round these old trading stations, such as would shock the ears of Exeter Hall, and drive Mr. Stead into hysterics. When we learn, however, that what with the consequences of exposure, the perils from Indians, and the accidents peculiar to their calling, the average of life among the trappers was only three years, we cannot be astonished at their recklessness. It seems scarcely rational in those who sit at home at ease to complain of the imperfections of men who do the rough and dirty work of Society in first penetrating the wilderness.

Similarly as Washington missed falling within the domain of John Bull, so, a few years later, at the time of the war between the United States and Mexico in 1846, England lost the opportunity of adding California and Oregon to her possessions. The story is still told of the way in which a Yankee skipper hurried to hoist the Star and Stripes in Southern California, and thus neutralised any claims England might prefer by virtue of the visit of Vancouver to the coast a century ago, or by reason of the acts of the Hudson Bay Company. Had England been keenly alive to her own interests, she might, previously to the Mexican War, have purchased the nominal rights of Mexico over California for very little, when the most agreeable lands in the temperate zone of the northern hemisphere would have passed under her flag in addition to those of the southern.

The whole of the Pacific slope is by nature isolated from the rest of the United States, and until connected with them by the formation of the Central Pacific Railway in 1869 the spirit of its population was by force of circumstances self-centred and sectional. It would not have been difficult, therefore, for England, had she been quick in annexing this territory sixty years ago, to consolidate her power along this coast as far as British Columbia, and shut the United States out from the Pacific Ocean. The millennium is as far off as ever, and time will show whether or not it was judicious of England to forego the advantage of excluding American influence from these waters. Americans cannot accuse England of having pushed her opportunities to the uttermost in this matter, or in abstaining from allying herself with the Confederate States during the War of Secession, and thus permanently rending the Union. Had England followed such a safely selfish policy there would probably have been no Chicago Exhibition, or at least a very much smaller one. The only reward vouchsafed her by the arrant partisan of the greatest people on earth is abuse for having let the "Alabama" escape to prey upon American shipping, and for which England voluntarily paid. Goodwill towards your rival can always be denied by him, but the advantage of position you have secured as against him is a self-evident and tangible thing, before which even he must be silent.—M. H.

(To be continued.)

### BRUSSELS SPROUTS.

THIS much-esteemed Brassica is one of the most useful vegetables to grow for autumn and winter use. It scarcely seems possible to have too many. Let the winter be what it may, we can always rely on getting a good return of sprouts, which are invariably highly appreciated, often to the extent of considerably lessening the supply by gathering before fully developed. This, I think, may be in some degree obviated by planting out a good breadth somewhat earlier than is usually practised. To do this of course it is necessary to devote a piece of ground solely to this crop, so that the stems of the plants may become strong and sturdy, a condition absolutely necessary for the production of a full crop of firm sprouts.

Rich firm soil is one of the greatest factors in bringing about this desirable state of affairs, so that when the land is in good heart no digging previous to planting is necessary; but if it is only moderately fertile a good dressing of manure should be given, and the ground dug deeply some time previous to planting; it is then an easy matter to tread firmly or roll the ground. Then by taking the precaution to give the plants plenty of room the growth made is strong, but at the same time sturdy and short-jointed.

The various strains of exhibition Sprouts are, I think, the best, and under proper cultivation the stems are packed from top to bottom with fine solid buttons. The earliest plants ought now to be ready for planting in their final quarters, and when planted out thus early I find 3 feet apart each way is not too much room to give them. If drills are drawn a couple of inches deep the work of planting is afterwards expeditiously performed, and should watering be required no difficulty is experienced in thoroughly moistening the soil around to reach all the roots. If the plants have been previously pricked out 4 inches apart, by the aid of a trowel they may easily be lifted with good balls of earth and planted where required, pressing the soil very firmly about the roots. When once established there is then but little labour needed save that of keeping the ground free of weeds till the first buttons are ready. It is, however, a good plan to draw a little soil up to the stems on each side, as it prevents them to a great extent from being damaged by wind.

Paragon is certainly a splendid variety, and should be largely grown where those of a dwarf habit of growth are preferred. The sprouts, which are produced in great abundance, are of extra fine flavour, and of a deeper green colour than many varieties. If the rows are arranged 2 feet asunder the plants may be set 18 inches apart in the rows. Northern Prize is another splendid variety, sturdy in habit of growth, requiring the same amount of space as preceding one. Other varieties might be enumerated, all of which have some feature to recommend them, but except for exhibition purposes there is no advantage gained in growing many sorts, and I think the three above named would be hard to beat. Our seed of the two last-named varieties being sown two or three weeks later than the exhibition strain, the plants are now ready for pricking into nursery beds; a good succession will thus be obtained, but I endeavour to have the principal plants early, as their value is then greatly enhanced.

Those who have at the present time ground lying idle will do well to plant as much of it as is practicable with this fine winter crop, and in some instances to plant between the rows of Potatoes



a little later on. In that case planting 18 inches asunder between alternate rows, and then lifting every other plant with a spade and planting to form intermediate rows (as soon as the Potatoes have been lifted) is the method I prefer. By so doing the Potato haulm may be kept comparatively clear of the young plants ; but it must be admitted that even this advantage is obtained at the expense of the Potato crop. All things considered I am convinced it is sound practice to keep Brussels Sprouts, as far as possible, clear of Potatoes or any other crop, excepting one which is likely to be cleared shortly after the plants are inserted. When a good breadth of early Spinach is grown, when it does not occupy a narrow border, an excellent position is obtained for Brussels Sprouts, as the Spinach will be ready for clearing away by the time they are growing freely.—H. D.



#### CATLEYA MOSSIÆ HOWARDIANA—WOOD WOOL FOR PACKING.

WILL you kindly give me your opinion as to the quality of the enclosed flowers of *C. Mossiæ Howardiana*? I believe it was named two years ago. I am afraid the flowers will not reach you in good condition as I can see signs of damping in the petals. I should also value your opinion as to the suitability of wood wool for packing flowers. I have sent a great number of Orchid blooms to Eastbourne and London this season, and am told they travelled perfectly. I am now sending to Malvern (eighteen hours' journey), which will be a severe test.—C. R. F.

[The flowers are of excellent quality, petals and sepals broad, smooth and clear, and the lip chastely coloured. They arrived quite fresh in the wood wool, of which we have not seen a softer, sweeter, or better sample. Some shavings we have received are too harsh for flowers, and so strong in the peculiar wood aroma as to impair the flavour of ripe fruit packed in the material.]

#### CULTURE OF CŒLOGYNE CRISTATA.

THERE are few more easily grown or profitable Orchids than *Cœlogyne cristata* and its varieties. The flowers are produced in drooping racemes during the first three months of the year, and being pure white, with the exception of a splash of golden yellow in the lip, are in great request for making bouquets, sprays, and wreaths, for which purposes the flowers are admirably adapted, as they wire well, are fragrant, and keep fresh in water for several days after being cut.

As a decorative plant this evergreen Orchid has few equals. Plants grown in pans from 4 to 6 inches in diameter are very useful for standing in small vases in rooms and for grouping or standing on edges of staging. The drooping spikes, consisting of from five to seven flowers, are very effective when contrasted with the groundwork of green shiny oblong pseudo-bulbs, from the base of which they spring, and the green arching leaves. Deep pans, about 12 inches in diameter at the top and 3 inches less in the bottom, well filled with pseudo-bulbs in full flower, show to great advantage stood on top of pedestals about 5 feet high in the boudoir and other rooms.

Potting should be done immediately the plants have finished flowering. Perfect drainage being essential to the well-being of this plant, from 2 to 4 inches deep of potsherds and small charcoal, according to the size of pan used, should be placed in the bottom of each, putting large pieces over the holes, and finishing off with small ones on the top, so as to secure a free passage for the water applied at the roots. A compost consisting of peat and sphagnum moss is generally given *Cœlogyne*s as a rooting medium, and they do very well in this ; but they do better in an admixture of equal parts good peat and loam, every particle of fine being shaken out, a little sphagnum moss and fine charcoal and potsherds added. In potting keep the mixture and pseudo-bulbs well above the rim of the pans, and make the compost firm.

The temperature of an ordinary plant stove will be congenial to the requirements of the plant, giving it a position near the roof glass and plenty of water at the roots during the summer and early autumn months. We grow our plants in the *Cattleya* house, which suits them admirably. Applications of weak liquid manure given at the roots twice a week during the period indicated will prove beneficial to the plants.

The largest plant I have seen of *Cœlogyne cristata* was at

Melchet Court, near Salisbury ; it measured 5 feet across, and bore over 500 large flowers.

Late-flowering plants which have not already been repotted should be seen to at once, shading them from sunshine during the heat of the day. *Cœlogyne cristata* was introduced into this country from Northern India in 1837.—H. W. WARD, *Longford Castle Gardens*.

#### ONCIDIUM PAPILIO.

THIS is the well-known Butterfly Orchid, a remarkable and free-flowering species. The flower spike rises from the base of the bulb, and bears a succession of single flowers, each one an almost exact representation of a butterfly. It produces flowers for years from the same stalk ; and if by accident it may be broken off at or near the top it begins to grow at once from the next joint below, and soon yields blossoms again.

This *Oncidium* is best grown on blocks, surfaced with fresh green sphagnum, in the spring, which should be kept growing all the summer, and in the winter the greater part of it ought to be removed, as too much moisture at the base of the bulbs is apt to cause them to decay. It should be grown in the hottest house, with abundance of sunlight and atmospheric moisture.

#### PHAIUS × AMABILIS.

THIS is a new and distinct hybrid, the result of a cross between *P. tuberosus* and *P. grandiflorus*. It was exhibited at the Drill Hall in February last by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, and a first-class certificate was awarded for it. The lip is comparatively short, brownish red, shaded with purple, this extending into the throat. The sepals and petals are bluish,



FIG. 82.—PHAIUS × AMABILIS.

veined with light brown. The plant is dwarf in habit, and is apparently a free bloomer. Fig. 82 represents the flower.

#### EPIDENDRUM BICORNUTUM.

Few Orchids have puzzled cultivators more than this beautiful *Epidendrum*. No one seems to have found a way to improve on imported plants of this species in the way that we can on some others. Possibly the best way to grow it is in pots or baskets filled with nothing but clear potsherds and charcoal and a little live moss when it is growing in summer, but whatever is used for potting the material should be of a very lasting character, as this Orchid cannot endure being disturbed at the roots.

If a newly imported plant once takes with a will to anything in the way of compost it will thrive and flower for a few years fairly well, but if disturbed it seldom takes well to its new home. This Orchid should be grown in the warm house and suspended near the glass to receive the full benefit of air and sun, and ought to be repeatedly syringed in the summer, also freely watered at the roots.—H. RICHARDS.



## WATERING, MULCHING, AND SHADING.

THE question of watering is always recurring. In a period of drought such as we are now experiencing an insufficient water supply makes itself felt to the worry of the responsible head, and often to the subordinate by the extra labour called for. I have lately heard from several gardeners about their troubles arising from a limited water supply, and also from a lady who, with a practically unlimited command of water, was afraid to allow its use in case it might prove detrimental, as she had been assured that artificial watering was always to be avoided. It is true that if watering can be avoided it is so much the better; but cases are constantly occurring when it is wise to apply water. There is no law other than the judgment of the cultivator as to how much or when water may be applied. The judgment may be that of experience, or of an experimental kind, and be therefore either good or bad; but we cannot define how or when to water so as to make it an easy subject to young cultivators.

One particular phase of watering that I shall touch upon is that whereby the application of water leads to further supplies being required. A most common example of this kind occurs in the treatment of fruit trees. I have seen it exemplified over and over again. Theoretically the practice is right, but when reduced to the exigencies of everyday routine it breaks down. This is something like what happens. Fruit trees are planted and a quantity of turf employed in the process, or it may be trees are only root-pruned and the same plan pursued. In any case the lumps of turf are as sure to become quickly dry in a short period of drought as the roots of the tree are certain to penetrate the turf. Watering of course follows, and in all probability it is continued as the liquid can be spared. In a season like this there is a breakdown. Now, the best loam without fibre is quite as good as turf, and as it dries no more quickly than well cultivated soil does there is an apparent benefit secured by employing loam. The proper pulverization of the soil forms indeed a means of combating drought, which is perhaps not generally recognised. It is quite common to see men when digging making the surface of the soil very smoothly, while lumps are left unbroken in the trench or furrow, and I am certain, from a long trial, that it pays, not only in the conservation of moisture, but in many other ways, to break every clod which is turned over. And, indeed, the main reason for trenching and digging is found in its being the only means of breaking the soil into small particles.

Another means of saving water consists in sowing deeply. It is not, perhaps, wise to cover the seeds deeply, but it is a good method to draw drills or even to make narrow trenches for seeds, though these drills and trenches need not be filled to the level. If water is required it is easily given by applying it along the depression left. Then, after becoming partial dry, let the depression be filled with soil. This plan is equally good for plants. I always carry it out in dry weather alike for vegetable crops such as Lettuces, Broccolis, and Cabbages, as well as for flowering plants, such as Asters, Verbenas, Ageratums, and indeed everything that is likely to suffer from drought before getting established. For plants such as Gladiolus growing on the level and already established, a drill is drawn out with a hoe close to the base of the plants. Along this drill the water is poured through a hose, and the soil thereafter pushed back. Of course when plants get large and the soil full of roots watering must consist in irrigating the land through and through, but at present few, if any, crops will require so much water.

I was pleased to see, some weeks back, a writer recommending common salt as a means of producing moisture. It may not be generally known that all salts employed as manures have a like property. So have phosphatic manures, none so much, perhaps as superphosphate of lime; but I notice that slag flour also exerts a wonderful influence on crops during a drought. In no instance is this principle so marked as in cases where any of these manures have been applied during dry weather as a surface dressing to any crop whether of vegetables or of flowers. The plants in a very short time show that they experience benefit, growing as they do with enhanced vigour and producing foliage of a stouter texture and darker colour.

To cereal crops I have this year applied a mulch of sifted compost. Tentatively I have employed the same material before, and the results justified the employment of more labour in extending what had proved a valuable cultural help. Such a covering, however slight, acts as a non-conductor. It has, moreover, the additional advantage of being distinctly beneficial as a manure. In top-dressing a series of borders I ran short of a supply this spring. The difference in the dressed and undressed sections was very marked indeed; no doubt in a way by conserving moisture, but certainly also by proving effective as a manure.

Much labour as well as water may be saved if some attention is paid as to the time of application. Even in dry weather the sun

does not shine every day nor all day long. Now I think it is not uncommon that hot sunny days are chosen in which to irrigate, and dull days are allowed to pass without being taken advantage of. A dull day is no doubt somewhat significant of rain, and therefore one hopes that watering may be avoided, but in reality these sunless days very seldom result in a downpour from the empty clouds; so that it is advantageous to make the most of them and water everything that needs it, or that is likely to suffer from continued drought. On sunny days the time to water is towards evening. Water is practically wasted when employed at any other time of day.

I shall conclude with a note on watering plants in pots. I have already pointed out the rapidity that trees planted in turf require to be rewatered. So with potted plants. If a light fibrous turf forms the staple compost the amount of water required to keep plants in vigorous health will be much greater than in cases where a loam with little or no fibre is employed. Hence, also, that the gardener who succeeds with his plants is the one who studies the kind of soil in which they are potted, and who applies water accordingly. Of course, a fibrous turf is a safer medium, because, notwithstanding its aptitude to dry quickly, there is little danger to the plant from an overdose of water, such as there is in the case of non-fibrous composts. A very good rule in all cases is that which allows just sufficient water to reach the drainage of the pot without any great quantity escaping. It is a fact that only a per-centage of young gardeners ever grasp the situation and become expert at watering, and I may say that I have never known one who did clearly understand it who has failed to grow all kinds of plants well.

But in addition to the application of water itself, I am sure that the distinct benefit of shading, however slightly, is greatly overlooked in the general cultural treatment of plants. Whenever the sun affects house-grown plants shade should be applied at once. A slight shading will do no harm whatever, whilst it certainly tends to keep the water-pot away, and at the same time obviates sudden and repeated dryness; is easily applied and as readily removed. I have used it for some time. It is prepared by mixing whiting with a little linseed oil and water. It can be made of any required thickness, though a very thin mixture does for most plants. If required tinted, a little colouring matter such as employed by painters for distemping walls is added, sufficient to give the desired tint. With the aid of a "stippling" brush a large surface is gone over expeditiously. I am certain that even such a slight shade as here recommended saves at least one-half in watering; while in other respects no harm, but most generally benefit, to the plants is the result.—B.

## PACKING AUSTRALIAN FRUIT.

IN pursuance of a request that I would get together a small jury of experts on fruit and fruit packing, the following gentlemen attended at the Imperial Institute on Friday, June 2nd:—Philip Crowley, Esq., F.R.H.S., F.L.S., F.Z.S., &c., Chairman of the Royal Horticultural Society's Fruit Committee; Dr. Robert Hogg, LL.D., F.R.H.S., F.L.S., &c., author of "The Fruit Manual" and a member of the R.H.S. Fruit Committee; George Monro, Esq., F.R.H.S., importer and salesman of fruit, Covent Garden Market; James Webber, Esq., F.R.H.S., importer and salesman of fruit, Covent Garden Market; Rev. William Wilks, M.A., F.R.H.S., Master of the Worshipful Company of Gardeners, Secretary of the Royal Horticultural Society, and a member of the Fruit Committee.

The question laid before them was—

- 1, To decide on the relative merits of the packing and general condition of samples of Apples and Pears from Melbourne.
- 2, To furnish useful hints (if any required) for the better packing of the fruit, and its arrival (if possible) in better condition in future in this country.
- 3, To offer suggestions as to the varieties sent.

On the first head they were unanimously of opinion that the samples sent from Tumuc Valley, Pakenham, were both the best packed and in the better condition.

On the second head they remarked that they were unable to commend the packing of either parcel. In the Neilson samples each fruit was enclosed in a paper bag, and the bags wedged in the cases with paper shavings. They considered bags in themselves undesirable, as preventing the escape of the necessary moisture sweating out of the fruit. The paper of these bags was also of a kind calculated to retain moisture. The Tumuc samples were loosely wrapped in squares of paper, which was considered the right method, and the paper was of a much better quality for the purpose. The Committee thought tissue paper the best.

The "padding with paper shavings" was considered unnecessary, and tending to retain moisture and prevent free circulation of cold air, and in the cool chamber in transit. The Committee recommend that the fruit be packed earlier—*i.e.*, that it should be in a less ripe state when packed; that each fruit should be folded in a square of tissue



paper, and that the fruits be then closely and firmly packed together in the cases, *no padding whatever being used* save just sufficient at the sides to prevent the fruits shaking out of place. The sides of the cases should be made of two parallel boards, with a space left between them to allow free exit of moisture and ingress of air during transit. The Committee attached the greatest importance to the words in italics. It should be mentioned that in both the Tumuc and Neilson parcels the Pears were all absolutely rotten, and arrived all in a mash; whereas some sent a week or two earlier only wrapped in tissue paper, with no padding, but with side ventilation to the cases, were still in almost perfect condition.

Under the third head, the varieties sent were London Pippin, Sturmer Pippin, Rome Beauty, Stone's Pippin, Jonathan, and Adams' Pearmain (it was said by a gentleman from Melbourne that Adams' Pearmain was called Dutch Mignonne in Australia, but there was no question with the Committee that the fruits were Adams' Pearmain, and had nothing to do with the true Dutch Mignonne). Of these varieties Sturmer had arrived in by far the best condition, leaving in fact little to be desired; and London Pippin in the worst, there being very few perfect or even passable fruits. The other varieties were all more or less woolly. Jonathan is a very attractive-looking Apple, and if it could be sent over in a less mealy condition would no doubt sell; but judging from the samples, Sturmer will prove by far the best market fruit. The same remark applies to Adams' Pearmain as to Jonathan.

With regard to the cases used the wood was considered sufficiently good for the purpose, but the ventilation at the sides, as in the Tumuc samples, was considered a *sine qua non*. It was incidentally remarked that much of the Tasmanian fruit lately sent has been spoiled by the very rough insides of the cases pressing unequally against the fruits. A specimen of a Tasmanian case was pointed out, the sides of which might be described as almost corrugated. Whether this be due to the very hard kind of wood used in Tasmania, or simply to the coarseness of the circular saw used in cutting the boards, the Committee were unable to say.

Signed on behalf of the Committee above named—W. WILKS, Sec., R.H.S.



#### ROSE SHOW FIXTURES IN 1893.

- June 14th (Wednesday).—Earl's Court\*.  
 „ 15th (Thursday).—Newport.  
 „ 20th (Tuesday).—Westminster (N.R.S.).  
 „ 24th (Saturday).—Reigate.  
 „ 26th (Monday).—Hitchin.  
 „ 27th (Tuesday).—Maidstone and Sutton.  
 „ 28th (Wednesday).—Clifton,\* Earl's Court, and Richmond (Surrey).  
 „ 29th (Thursday).—Eltham and Windsor.  
 July 1st (Saturday).—Crystal Palace (N.R.S.).  
 „ 4th (Tuesday).—Bagshot, Canterbury, Diss, and Gloucester.  
 „ 5th (Wednesday).—Croydon, Dursley, Ealing, Farnham, Hereford, and Lee\*.  
 „ 6th (Thursday).—Bath, Farningham, Manchester, and Norwich.  
 „ 11th (Tuesday).—Harleston and Wolverhampton.†  
 „ 12th (Wednesday).—Earl's Court and Tunbridge Wells.  
 „ 13th (Thursday).—Worksop (N.R.S.), and Woodbridge.  
 „ 14th (Friday).—Helensburgh.  
 „ 15th (Saturday).—New Brighton.  
 „ 20th (Thursday).—Bedford and Trentham.  
 „ 21st (Friday).—Ulverston.  
 „ 25th (Tuesday).—Tibshelf.  
 „ 27th (Thursday).—Halifax, and Southwell.  
 „ 29th (Saturday).—Bedale.

\* Shows lasting two days.

† Show lasting three days.

During the present month a list of Rose Show fixtures will be issued each week, so that I shall be glad to have early notice of the dates of any shows not mentioned above, and also of any change of dates.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

#### ANNUAL DINNER OF THE NATIONAL ROSE SOCIETY.

We understand that the Very Rev. The Dean of Rochester, President of the Society, will take the chair at the annual dinner of the National Rose Society on the 20th inst. at the Horticultural Club Rooms, Hotel Windsor, Victoria Street, Westminster.

#### STRAY NOTES.

I HAVE turned to the Rose column of the Journal week after week in the hope of seeing an account from some well-known source as to how Roses are doing in this wonderful season, but, with the exception of the significant notice from Reigate, hitherto in vain. The season has been against writing, except when goaded by sparrows, for we have wanted all the daylight for work, and those who have been short-handed, or were in arrears, have had a busy time, for the position

being nearly a month earlier than usual in some things, it follows that we have had since March to do four months' work in three. In almost every other spring that I can remember there has been a time of greater or less duration, when it has been a common expression that "everything is at a standstill." Then, poor laggards, like myself, have made up lost time, but this year things have always been getting forward from the sun and warmth, even if they could not grow much from want of rain. It has been "a run without a check"—capital for those who could keep pace with it, but a little seasonable check would not have been lamented by one at least who could hardly keep up with the things which wanted doing.

Between March 1st and May 21st we had only once (on May 2nd) sufficient rain to really lay the dust, and we still want it nearly as bad as ever. We tried long ago all the approved dodges which are usually successful in provoking rain, such as marking out the lawn tennis court afresh, leaving comfortable chairs and even valuable books out of doors at night; but in vain, and had begun to talk of the advisability as a last resource of sending a deputation over to hang Professor Falb, who foretold the drought, when luckily Jean Ducher came to the rescue by producing two fine buds in just the condition to be spoiled by a shower. We ceased watering, in the full conviction that if those buds did not tempt a prowling thunder shower nothing would, and that in that case I should at least see a good Jean Ducher in the open, which I have not done for many years. The bait took as I thought it would, but alas! though it takes a very little rain to spoil a Jean Ducher, it would now take a great deal to quench our thirst; and we are, though a little refreshed, by no means satisfied.

I expect we have all had some difficulties to contend with. I did not know what to do with my Rose beds, which were so hard they could not be hoed without being watered, and could not be watered without being hoed. I had to break them first with a pick. Then, to my shame, I was behindhand in planting out my Briar cutting stocks, and had to do this in April when the earth was like iron and the heavens as brass, and the plants themselves were green and growing. But there is a great deal in careful planting, and nearly all look better than I anticipated. I heard of one gallant rosarian who hired the town fire engine and twelve men for a week to keep his stocks alive; and of another who left off watering in despair. The Dutch hoe has once more proved an efficient substitute for the watering pot (though it is better still as an aid) in many places; and, in general, stocks and all moved plants have been those that have suffered the most and required the greater attention. I hope that other Briar cuttings inserted last year do not look as bad as mine.

As to caterpillars and grubs, I did not mean to suggest, when I wrote at pruning time, that there would be none, but that there would probably be fewer than usual, and this is the case here in a marked degree. I fully expect that Mr. Mawley, whose statistics on these and other rosarian matters are so valuable, will confirm my opinion. A large majority of the buds look well formed and promising. The wood growth is naturally not great, but a harvest with good ears but short straw is not uncommon, and I hope this may be the case with Roses.

I suppose Reigate has expressed the general estimate of the season by making their date a fortnight earlier; but "three weeks earlier than usual" would, I expect, be the prognostication of some localities. A great deal depends upon June, and I myself do not expect to be much more than a fortnight before the usual time. My standard Teas, especially those which were buried, do not look as if they would be forwarder than usual. I think the burying answered very well with all those which had to be pruned, but the Maréchal Niels do not seem to have approved of it. They are growing well and strongly, but show few signs of flowering even from the long wood of last year.

It certainly seems as if some warmly debated questions as to the date of the National Show will be answered this year. We ought at least to be able to see what is to be seen of northern growers, and *somebody* at least will have the gratification of saying, "I told you so."—W. R. RAILLEM.

#### GLOXINIAS AT SHROVER HALL.

THE finest Gloxinias I have ever seen are now growing in Sir William Pink's garden, a few miles from Portsmouth. Many of the plants measure 2 feet in diameter and carry fifty blooms, some measuring  $4\frac{1}{2}$  inches in diameter. The bulk were of the upright section, a few semi-drooping. The foliage was luxuriant, one leaf measured being 11 inches in length and 8 inches in diameter. As we do not find Gloxinias so fine in every garden, a note on Mr. Hunt's method of culture may not be out of place.

The seed (Sutton's) was sown in February last year, consequently the plants were sixteen months old at the time of flowering the second season. Last year they bloomed in July. The seed was sown in heat in the usual way, the plants pricked off and potted when ready. The corms were wintered in the Mushroom house in the pots in which the plants flowered. In February of the present year they were placed in a newly started vinery to make their first growth, the moisture required for the Vines just suiting the Gloxinias. Mr. Hunt does not approve of



shaking the combs out of the soil in which the plants were grown. He considers many roots are broken, or so damaged by that practice, that the most fibrous are of little use to the plants. By shifting into larger pots without removing the old soil the roots are preserved intact. A plant flowering last season in a 48-size pot will this year be shifted into a 7-inch one. The compost employed consists of two parts loam, one of decayed leaves, and one of peat, a quart of bonemeal and a handful of soot being added to every bushel of compost. Some of the largest plants were still in the pots in which they flowered last year. Their appearance demonstrates that Mr. Hunt has made no mistake in the method of culture he has adopted with such marked success.—E. MOLYNEUX.



**EVENTS OF THE WEEK.**—As previously announced, a Rose Show will be held at the Gardening and Forestry Exhibition, Earl's Court, on June 14th and 15th. On the 14th inst. also the grand Yorkshire Gala will open at York, continuing the two following days.

— **THE WEATHER IN LONDON.**—Bright and sunny weather has for the most part again prevailed during the past week. Slight showers fell on Saturday evening, and on Tuesday night there was a refreshing rain. As we are preparing for press it is bright and warm.

— **THE ROYAL HORTICULTURAL SOCIETY** intends holding a Show at Chiswick Gardens on July 11th. Prizes to the amount of nearly £150 are offered, besides two silver cups. There will also be a great Show at the Agricultural Hall on August 29th, 30th, 31st, and September 1st, at which over £460 is offered in prizes, as well as medals and cups. Schedules of either Show can be obtained from the Secretary, R.H.S. Offices, 117, Victoria Street, S.W.

— **NATIONAL CARNATION SOCIETY (SOUTHERN SECTION).**—At a Committee meeting held at the Hotel Windsor on June 3rd it was unanimously agreed that, owing to the exceptionally early season, the date of the Exhibition which was to have been held in the Drill Hall, James Street, Westminster, on July 25th, under the auspices of the Royal Horticultural Society, should be altered to July 11th, and that the Exhibition be held in the gardens of the Royal Horticultural Society at Chiswick on that date.—JAS. DOUGLAS, *Hon. Sec.*

— **NATIONAL AMATEUR GARDENERS' ASSOCIATION.**—At the monthly meeting of this Association, held at the Memorial Hall, Farringdon Street, E.C., on Tuesday, June 6th, under the presidency of Mr. T. W. Sanders, an admirable lecture on "Fertilisation" was given by Mr. W. Cuthbertson. There was a very large audience, who appreciated the lecturer's remarks. Mr. Cuthbertson dealt with his subject in an able manner, and by the aid of well-executed diagrams expressed himself clearly on many technicalities. A hearty vote of thanks was accorded the lecturer. Messrs. Dobbie & Co., Rothesay, sent a large collection of Violas and Pansies, and Mr. H. J. Jones, Lewisham, some charming Pelargoniums.

— **NATIONAL CHRYSANTHEMUM SOCIETY.**—The annual outing of the members will take place on Monday, July 17th, Lord Carrington having given his permission for a visit being made to the grounds of Wycombe Abbey, High Wycombe. Among the arrangements for the day will be a match of cricket with the members of the Aylesbury Floral and Horticultural Society, who will be accompanied by a number of friends from that town. Arrangements will also be made for visiting Hughenden Manor, and for inspecting one of the large chair-making establishments in the town and other places of local interest.

— **SUTTON'S RINGLEADER POTATO.**—Mr. E. Molyneux, Swanmore Gardens, writes:—To further test this early Potato, of which I had previously formed a high opinion, on March 6th I planted several rows on a south border somewhat exposed to easterly winds. At the same time I planted an equal number of Sharpe's Victor. The tubers of both sorts were well sprouted. The former was ready to dig May 20th, and the latter one week later. In point of size and cooking qualities Ringleader in my opinion was in advance of the Victor. I may say that the soil here is not of the best kind for the growth of early Potatoes, being rather too heavy. Last year our first digging of Ringleader from the same site was June 3rd, planted April 4th.

— **GARDENING APPOINTMENT.**—Mr. Thos. Lowton, gardener for the past four years to the late Mrs. Carter, of Ospringe House, Faversham, has been re-engaged by the present owner, A. J. Gillott, Esq.

— **A GOLD MEDALLIST.**—The gold medal of the Linnean Society has this year been awarded to Professor Daniel Oliver of Kew, to whom it was presented at the anniversary meeting of the Society held at Burlington House on the 24th ult.

— **STRAWBERRIES IN LONDON.**—English Strawberries from early localities are now selling freely in the streets of London at about 4d. per lb. As a rule the fruit is much below the average in size, doubtless owing to the prolonged drought.

— **THE INNER TEMPLE GARDENS.**—It is stated that, by permission of the Treasurer and Benchers, the Inner Temple Gardens will be opened to the public from to-day (Thursday) until the end of August, between the hours of six and nine o'clock in the evening.

— **FROST IN JUNE.**—A Wood Green correspondent writes:—"It may interest your readers to know that in this district a frost occurred early in the morning of June 1st. Vegetable Marrows, Scarlet Runner Beans, and Potatoes were much injured in some allotments in the neighbourhood."

— **EARLY CHERRIES.**—We are informed that Mr. Peter Cornwall of Bredgar, Kent, commenced gathering Cherries on the 26th ult. The variety was Adams' Crown, which usually ripens early in July. It would be interesting to hear of other instances of "record breaking" as regards the earliness of fruit-picking.

— **PEA MAY QUEEN.**—On March 6th I sowed seed of this new wrinkled Marrowfat Pea along with English Wonder on a south border, and gathered the first pods from the former May 22nd, and from the latter on the 27th. May Queen is, without doubt, an excellent early variety, growing 2½ feet high, and bears an abundant crop of well-flavoured peas. It is much in advance of William I., or any of that type, in point of flavour.—E. MOLYNEUX.

— **PANSY BELLA DUNCAN.**—Mr. Michael Cuthbertson, Public Park Nursery, Rothesay, sends us blooms of his new Fancy Pansy Bella Duncan. It is a beautiful variety, the flowers being exceptionally large and of great substance. The blooms are characterised by large, rich purple blotches, the side and lower petals being evenly edged with white. The top petal is also similarly blotched with a deeper white margin. It is said to be very dwarf in habit, free flowering and robust, well suited for exhibition or bedding.

— **POLLINATION OF TOMATOES.**—A "Constant Reader," on page 416, gives the result of a microscopic examination of the stigmas of Tomato flowers after the ordinary and American methods of distributing the pollen was resorted to, and finds no appreciable difference in favour of either plan. He will confer a great favour by repeating the experiment next autumn or early in the winter, this being when a good set is less easily effected, and when the American method I described on page 350 should prove its superiority over merely tapping the stems.—W. IGGULDEN.

— **PACKING SCIONS.**—The question (page 393) relating to the packing of scions prompts me to say that I have had small stools of Chrysanthemums sent to me from New Zealand, arriving in good condition. As the Editor remarks, oiled silk is excellent material for the outer covering. In my case the roots were wrapped in damp moss and enclosed tightly in oiled silk. After travelling all that distance I was enabled to get the plants to grow without any trouble whatever. If this method is successful with roots of Chrysanthemums it surely would be with scions of fruit trees.—E. MOLYNEUX.

— **EARLY GEM CARROT.**—Captain F. Daubeney writes:—Mr. Dunkin mentions this variety on page 435. My own experience is that it is the earlier and the better in comparison with Early Nantes. This year I sowed Early Gem in a frame on February 8th. Owing to the season being so warm the lights were removed on March 8th, and never afterwards put on, night or day. All the crop has been pulled, and an excellent one in every respect. I grew Early Nantes by the side of Early Gem in frames in 1891. Since then I have grown only Early Gem for first supply of Carrots, and my experience has told me it is the best, as James' Intermediate is for main crop. Another of Sutton's early vegetables deserves mentioning, it is Cauliflower Magnum Bonum. Sown this year on February 1st, I commenced cutting on June 2nd, and this is in some respects a bad season for Cauliflowers.



— **SUNFLOWERS IN HOSPITALS.**—A correspondent writes to a Cornwall paper:—"If there were large numbers of Sunflowers in pots in all hospitals, they would do great good, absorb the impure air, and give out what would be beneficial, and it would be a great improvement if plants instead of cut blooms were sent to them. If the water is often changed the flowers will last fresh much longer."

— **DESTROYING CRICKETS.**—I successfully capture crickets by placing jam jars half filled with beer near where I know the pests abound. I simply sink the jars to the rim, and examine and take out the dead crickets every morning. Woodlice, too, are caught very easily in this way. It is no uncommon occurrence for a cluster of Grapes to form at the extreme point of a shoot; I always take them off.—J. HINTON.

— **EARLY POTATOES IN SCOTLAND.**—A northern correspondent, writing under date, May 30th, says:—"Bute Potatoes will be in the market about three weeks earlier this year than usual. Those grown on the farm of Langalchorad, Kingarth (Mr. Hugh Duncan's), are generally first, and yesterday (29th ult.) several parcels, the first lifted in the island this year, were brought into Rothesay. They are quite ready for use, and are remarkable for size and appearance at such an early period of the season."

— **THE TOTAL RAINFALL AT ABBOTS LEIGH, HAYWARDS HEATH, SUSSEX,** for May was 0.67 inch, 1.28 inch below the average. The heaviest fall was 0.30 inch, on the 17th. Rain fell on seven days. The maximum temperature was 80°, on the 15th; the minimum 37°, on the 1st and 31st. Mean maximum, 68.4°; mean minimum, 45.2°. Mean temperature, 56.8°, about the average. The rain here has not been sufficient to do much real good, followed, as it has been, with bright sunshine and drying northerly winds.—R. I.

— **ECHIVERIA PEACOCKI.**—This succulent, one of the most striking for carpet bedding, is very largely employed at Hampton Court. It seems to be a very difficult variety to winter, as it is so susceptible to damp. For that reason it is found best to keep all the plants in small pots singly, keeping the soil somewhat dry, and standing them on upper shelves in the greenhouses. Once damp seizes upon the plants it is difficult to save them. It does not seem possible to obtain seed, but propagation is carried on by pulling off the lower and partially decayed leaves from the older plants, and laying them upon sand, where being gently damped and shaded they presently make root and growth. When the plants reach some four to five years old they are beheaded, the crowns rooted as cuttings, and if the stems break into growth the side shoots are also utilised as cuttings. It is only by the exercise of constant care and attention in the direction of propagation that a good stock is maintained.—A. D.

— **BIRMINGHAM AMATEUR GARDENERS' ASSOCIATION.**—A large party of members and friends made up an excursion party on the 3rd inst. to Stoneleigh Abbey and Kenilworth, first visiting Mr. Henry Whateley's extensive market-growing establishment. The party then visited Stoneleigh Abbey Gardens, under the guidance of Mr. Biddard, the crops of Grapes, including two houses of Muscats; a large quantity of forced Strawberries, the old variety Lucas especially fine and high flavoured; and the extent and well-kept and cropped gardens being greatly admired. Hardy fruits are extensively cultivated here, and there are many well managed wall trees. There are fair crops, but the caterpillar is a trouble in the kitchen gardens, and in the woods a large number of trees and the Hazel bushes are almost stripped of foliage.

— **CUCUMBERS, TOMATOES, AND MUSHROOMS.**—Kenilworth has a great reputation for Strawberries, many tons being sent away to the different markets, and it is also gaining a celebrity for other market crops. Mr. Henry Whateley, Spring Gardens, had for a few years twenty houses in two blocks of ten each, each house 120 feet long, in use for Tomatoes, Cucumbers and Mushrooms, and a twelvemonth since he completed another block of ten houses, each 210 feet long, and these are all, with one exception, cropped with Cucumbers and Tomatoes, the latter a selected Old Red chiefly. There are grand crops in the various houses, an average of two tons being sent away weekly. The one house alluded to was planted with young Vines in May, 1892, and are making great headway, being very strong and many of them bearing fruit. Mushroom beds out of doors as laid down in Mr. Wright's book on Mushroom culture, are plentiful and cropping heavily, with only some straw litter thrown over them, showing how easy a thing outdoor culture is under proper conditions.—W. D.

— **INSECTS AND FRUIT TREES.**—Red spider has appeared, but I overcame it with a timely application of black soap and hellebore in two applications, but fear its effect was lost on caterpillars, which are a plague. The sparrows have, however, taken them in great numbers. The black aphid has invaded many bushes. Spraying with insecticides, and nipping the points off the growths are the best methods to prevent a loss of crop.—W. T.

— **POPULAR BEDDING.**—In spite of the efforts made to minimise carpet bedding yet does it seem to be as popular as ever with the masses, who are loud in their expressions of admiration for the beauty of many of the designs and the skill with which they are worked out. There seem to be three forms of bedding just now competing for popularity, but perhaps all the more pleasing when seen in juxtaposition for contrast—carpet beds, mixed beds, where a score of diverse plants are somewhat close together, forming a pleasing irregular mass, and Begonia beds, which are filled thinly, each plant standing well apart, the soil being surfaced with some spreading carpet plants. It is well that we have these styles and each one has admirers. Few, however, seem to be more attractive as well as simple than are the Begonia beds.—A. D.

— **A VARIEGATED OAK SPORT.**—When I was recently in the Royal Gardens, Kew, I observed high up on one of the branches of a large Turkey Oak a remarkable outbreak of small shoots from one place only, all clothed with leafage of a pale creamy tint. As the growth for so abnormal a form of leafage is fairly robust it seems as if the sport could be worked on to young stems, and in that way be perpetuated. I do not know whether any such experiment has been tried at Kew, but it seems to be worth attempting. It is not that creamy foliage of hardy trees is specially beautiful or effective, but at least the perpetuation of a sport of that description might have some value from a purely scientific aspect. How interesting it would be were a post-mortem examination of the branch possible, and the cause of this abnormal absence of green colouration in the leafage fully demonstrated.—VISITOR.

— **THE LATE MR. SAMUEL BARLOW.**—Not mentioned in your notes respecting this excellent and deeply regretted florist, most certainly not intentionally, was his famous act in growing the finest dish of Apples ever seen, and which formed so striking an object in the Guildhall Fruit Show and afterwards in the fruit present made to the Queen from the Exhibition by the Fruiterers' Company. Mr. Barlow's superb Peasgood's Nonesuch excited the wonder and admiration of all who saw them. Yet were they but illustrative of all horticulturally that he did, for he would have all things done well, and shown well. It was not very often we saw him south; he occasionally attended the Shows of the Auricula Society, and those not lately. When he did come he rarely failed to bring something good with him. It was far less his ambition to take prizes than to have the best things, because he believed in quality, and that of the finest cultivation could produce.—A.

— **SUMMER BEVERAGES.**—Mr. A. W. Duncan, F.C.S., writes as follows in "The Vegetarian Messenger":—"Fruit flavourings, such as Pear, Apple, Pine Apple, Strawberry, and Raspberry, have rarely had their origin in fruits. They are preparations of various ethers and alcohols. When used in very small quantities, so as to give only a slight flavour, the best of them are probably of no sensible injury; but aerated drinks, and even sweets, often contain a very objectionable amount. Some of the cheap temperance drinks sold at wayside houses are injurious; they sometimes produce a fulness and throbbing in the head. Fruit cordials consist nearly always of solutions of sugar, with artificial fruit essence, and a little citric or other acid. The best drink for quenching thirst, other than pure water, is Lime or Lemon juice. Simple aerated waters, containing nothing but a little sugar, citric acid, and a small quantity of Ginger or Lemon essence, are not to be condemned if they are of good manufacture. We are compelled to pay a high price for these at most hotels, and ought to receive a pure article; but it is a very common thing for hotel keepers to pay a very low price to the manufacturers. Many manufacturers, for the sake of a slight saving in cost, substitute hydrochloric acid for some of the proper fruit acid (citric or tartaric) in their drinks, and they give as a reason for the deterioration the competition and cutting of prices. Some of the so-called 'unfermented Grape juices,' as sold in bottles, are not as innocent as they profess to be. The temperance drinks, as they are generally termed—the fruit cordials and non-intoxicating beers—are but little used by vegetarians and teetotalers."



— GARDENING AND LOCAL INDUSTRIES IN IRELAND.—Dr. Boeddicker sends us the schedule of a Show to be held at Parsonstown on August 17th, which indicates that considerable interest is taken in the furtherance of gardening, bee-keeping, and other useful occupations in the district. The Earl of Rosse is President of the Parsonstown Society, and Dr. Boeddicker one of the Honorary Secretaries.

— KINGSTON AND DISTRICT GARDENERS' ASSOCIATION.—This young Society continues to meet monthly during the summer, as it was feared that entire cessation would be harmful. On Tuesday last Mr. Tibble, a member, read an interesting paper on "The Tomato," descriptive of his method of culture. The free use of the syringe by him elicited some surprise amongst the members, and this point, with several others, was freely discussed by Messrs. Hawkes (Chairman), Cushon, Henbest, Peed, Martin, Dean, and others. With respect to flavour in varieties, much difference of opinion cropping up, it was agreed that somewhere towards the autumn an opportunity to taste the numerous sorts grown by the members should be offered, as likely to create much interest.

— VARIEGATED PELARGONIUMS.—It was recently remarked that the various golden tricolor Pelargoniums are once more coming into favour for bedding purposes. That is equally true of the golden and bronze Zonal forms, the very best of which seems still to be Marshal McMahon; no doubt the finest zoned yellow leaf variety ever raised. Next that comes Black Douglas. It will not be a matter for surprise to find raisers once more devoting their attention to these forms. Then there is always a demand for the very effective old Crystal Palace Gem, the best of the golden zoneless section. No variety of its colour has ever excelled it, perhaps never will. As to the silver variegated forms, Flower of Spring continues to be the best perhaps, but should not be allowed to flower if the foliage be especially needed to produce a pleasing effect.—D.

— AN EXCELLENT FORCING STRAWBERRY.—Lucas, an old and comparatively little known variety as adapted for forcing, was recommended to Mr. Beddard, head gardener at Stoneleigh Abbey, by another gardener as a first-class foreer, and he has grown a good number this season. The fruit is of large size compared with forced kinds generally, firm, not at all subject to mildew, of good colour, and of a sweet rich flavour. Compared with other sorts under the same treatment the flavour is very superior to that of Sir Joseph Paxton, which at Stoneleigh is subject to mildew, La Gros Sucrée, Waterloo, and others forced here. It stands so high in Mr. Beddard's estimation as to be used largely another season, and out of doors it is a very good cropper. Large consignments of fruit are sent from Stoneleigh Abbey to Lord Leigh's London house, so that a Strawberry with the good travelling qualities of Lucas is a boon, and its most pleasant flavour when forced considerably enhances its merits. Out of doors the Strawberry crop is good. Noble is the earliest, and Waterloo and Eleanor will be the latest. The River Avon has a broad stretch at the foot of the sloping pleasure grounds close to the kitchen gardens.—W. D.

— PROTECTION OF PLANTS.—It is known that certain plant stuffs (alkaloids, tannin, oxalic acid, &c.) protect plants from attack by animals. This function, in the case of oxalic acid, says *Nature*, has been recently studied by Herr Giessler (*Jenaische Zeits*), taking species of Rumex, Oxalis, and Begonia. The acid mostly occurs in the epidermis and peripheral tissues of the vegetative organs; parts underground have little or none. The leaves show most, but the acid may be found in the stem and the leaf and flower stalks. Curiously, it does not, like other protective matters, appear in young organs. The older and more sappy the tissues the more oxalic acid do they contain. Snails, which avoided those plants in the natural state, ate them when the oxalic acid had been precipitated. The substitution of various means of protection for one another was elucidated by Stahl; plants not protected mechanically have chemical protection and *vice versa*. In the plants studied by Herr Giessler mechanical protection is deficient. Further, in organs that have little or no oxalic acid is found tannin. These two "vicariate" with each other also in different species of a genus. In many tissues both occur together. The protective function of a secretion, lastly, does not exclude other functions. Thus, regarding the epidermis as a water reservoir, the osmotically very active organic acids doubtless play an important part in the filling of the cells with water. The occurrence of Begonia and Oxalis species in very dry places, as also the deficiency in means of protection against transpiration, more pronounced the higher the quantity of acid, put this function of oxalic acid in a still clearer light.

— APPLICATION OF ARTIFICIAL MANURES.—Messrs. H. and E. Albert, 17, Gracechurch Street, E.C., send us Professor Paul Wagner's pamphlet on the above subject. It contains much valuable information, and is illustrated by striking photographic illustrations. The Professor bears effective testimony to Albert's concentrated horticultural manure, now being advertised, as he may well do, seeing that it is guaranteed to contain 14 to 16 per cent. of phosphoric acid, 20 per cent. potash, and 17 per cent. nitrogen, which are undoubtedly the most potent elements in the food of plants and crops.

— WEATHER AT SWANMORE.—Writing from Swanmore Gardens, Mr. E. Molyneux observes:—"Since my last note on the weather appeared in the *Journal* (May 11th), we have had agreeable rains, a total of 0.73 inch falling in five days, beginning May 16th. Since that we have experienced fifteen consecutive dry days, the spell being broken by a slight shower (0.12 inch) to-day (5th), making a total for the year of 6.97 inches—a small quantity. I never saw the soil in so dry a state as at the present time; not a particle of moisture is to be found for at least 2 feet deep. In the valleys around here a sharp frost was experienced on the morning of June 1st. The Potatoes suffered considerably in nearly all low-lying gardens. Here the thermometer did not descend below 40°."

— THE WEATHER LAST MONTH.—May was very dry, with the exception of six days (15th to 20th), the total rainfall being 1.67 inch below the average for the month. It was not so hot as April. The wind was in a northerly direction twenty-one days; we had thunder on four days, but no heavy storms. Barometer: highest, 30.50 at 9 A.M. on 5th; lowest, 29.52 at 10.30 P.M. on 17th. Total rainfall 0.76 inch, which fell on ten days, the greatest daily fall being 0.46 inch on 17th. Temperature: highest in shade, 75° on 4th; lowest, 33° on 7th; lowest on grass, 23° on 7th. Mean daily maximum, 66.38°; mean daily minimum, 44.13°; mean temperature of the month, 55.25°; mean grass minimum, 37.96°. The garden spring ran 20 gallons per minute on 31st. Grass and corn are wanting rain very much, but Wheat looks well in many places where the land is in good order. We hoped the drought was at an end with the shower on the 17th; but it has since been as bad as before.—W. H. DIVERS, *The Gardens, Ketton Hall, Stamford*.

— THE WEATHER IN HERTFORDSHIRE.—Mr. E. Wallis, The Gardens, Hamels Park, Buntingford, Herts, writes:—"The weather during the past month has been exceptionally bright; not one full dull day. Some sharp frosts have been registered, but fortunately they have not done much damage, owing to the very dry atmosphere. Rain fell on seven days during the month. Maximum in any twenty-four hours was 0.55, on the 29th; minimum in any twenty-four hours was 0.02, on the 19th. Total during the month, 1.21, against 1.37 of 1892. In spite of the dry spring, the rainfall has been higher this spring than that of 1892. By the end of May last year I had registered 6.15 of rainfall; by end of May, 1893, I have registered 6.24. Red spider and caterpillar threatened to become very prevalent, but by using London purple the caterpillar was easily destroyed, and employing petroleum and softsoap red spider has been held in check.

— STRAWBERRY TRAINS IN AMERICA.—In this country, during the fruit season, it is no uncommon thing to see truckloads of hampers of Strawberries, but we do not appear to have such facilities for transit as they have "on the other side." It is stated that it is possible, "by means of rapid transit, to extend the fruit season of any particular centre to four or six times the normal length. Strawberries first make their appearance in large quantities at Chicago in January, brought in fast express trains from Florida. Then as the Florida beds become exhausted, Louisiana fruit comes into the market, bringing the year up to the first part of March; Alabama next, a little nearer north, follows; while Mississippi brings the supply which carries the people over to the opening of the Illinois Strawberry season. Towards the end of May over twenty carloads of Strawberries, or 420,000 quarts, arrived in Chicago every day, and now the supply is doubled. In the height of the season, exclusive Strawberry trains are run from Cairo in the southern part of the State, stopping only to pick up loaded cars. Often these 'specials' will consist of thirty railway carriages, each carriage loaded with 450 crates of Strawberries, the entire train bringing into Chicago when fully loaded, 324,000 quarts. The scene presented at the Union Railway Station on the arrival of a 'Strawberry express' is unique and very interesting. Two hundred and fifty express waggons are drawn up on both sides of the railway line, while five minutes after the train has come to a standstill a small army of 800 or 1000 men are busy unloading the fruit, only gathered a few hours before."



— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS. — Mean temperature of month, 54°. Maximum on the 4th, 74.6°; minimum on the 6th, 29°. Maximum in the sun on the 14th, 127.9°; minimum on the grass on the 7th, 22°. Mean temperature of air at 9 A.M., 57°. Mean temperature of soil 1 foot deep, 54.2°. Number of nights below 32°, in shade two, on grass seven. Total duration of sunshine 182 hours, or 37 per cent. of possible duration. We had two sunless days. Total rainfall 1.56 inch, rain fell on ten days. Average velocity of wind 7.2 miles per hour, did not exceed 400 miles on any day, and fell short of 100 miles on four days. Approximate averages for May:—Mean temperature, 51.1°; sunshine, 175 hours; rainfall, 2.11 inches. Another warm and fine month. The drought which set in in the middle of March lasted up to the 17th, when only 0.60 of rain had fallen in sixty-one days. The mean temperature is higher than in recent years except 1889.—JOSEPH MALLENDER.

— CABBAGE COMPETITION.—Notwithstanding the severe winter and prolonged drought Messrs. Stuart & Mein's annual competition for early Cabbages, which took place on the 27th ult., proved as great a success as in former years. The £5 premium which they offer for the heaviest specimen of Mein's No. 1 Cabbage is open to the United Kingdom, the only condition being that the seed should be procured direct from the firm. Mr. J. H. Luxmore, Beeralston, Devonshire, proved to be the winner with a Cabbage weighing 12 lbs 12 ozs.; Mr. C. Jacobs, Niton, Isle of Wight, being a close second with one 12 lbs. 8 ozs. The returns of the weights from the various counties were extremely interesting, as showing with what varied success the early Cabbage crop has been cultivated throughout the country. Taking the heaviest single specimen grown in each county the result was as follows:—Devonshire (Beeralston), 12 lbs. 12 ozs.; Hampshire (Niton), 12 lbs. 8 ozs.; Pembrokeshire (Merlin's Bridge), 10 lbs. 2 ozs.; Rutlandshire (Uppingham), 10 lbs.; Glamorganshire (Aberavon), 9 lbs. 11 ozs.; Cornwall (Hayle), 9 lbs. 5 ozs.; Essex (Billericay), 9 lbs.; Sussex, 8 lbs. 12 ozs.; Ayrshire, Flintshire, and Monmouthshire, 8 lbs. each; Lincolnshire, 7 lbs. 11 ozs.; Somersetshire and County Roscommon, 7 lbs. 8 ozs. each; Kent, 7 lbs. 4½ ozs.; County Sligo, 7 lbs. 4 ozs.; Buckinghamshire, Berkshire, Merionethshire, and Staffordshire, 7 lbs. each; Brecknockshire and Cambridgeshire, 6 lbs. 8 ozs. each; Oxfordshire, 6 lbs. 4 ozs.; Derbyshire, 6 lbs.; Norfolkshire and County Armagh, 5 lbs. 15 ozs. each; Isle of Man, 5 lbs. 12 ozs.; Dorsetshire, 5 lbs.; County Durham, Surrey, and Bedfordshire, 4 lbs. 15 ozs. each; Lancashire, 4 lbs. 14 ozs.; Nottinghamshire, 4 lbs. 12 ozs.; Linlithgowshire, 3 lbs. 15½ ozs.; the remainder being from 2 to 3 lbs. each. The two heaviest specimens from one county came from Hampshire, 12 lbs. 8 ozs. and 9 lbs. 6 ozs.; Devonshire being second with 12 lbs. 12 ozs. and 8 lbs. 15 ozs.—(*Kelso Chronicle*.)

## ROYAL HORTICULTURAL SOCIETY.

JUNE 6TH.

THERE was a fair display of flowers at the Drill Hall on Tuesday last. Orchids were not so extensively staged as usual, neither were greenhouse and stove plants, but hardy flowers formed the bulk of the exhibits; Melons, Strawberries and Peas were also well represented. In conjunction with this meeting the first Exhibition of the London Pansy and Violet Society was held, and a report of this appears elsewhere.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair), with Rev. W. Wilks, and Messrs. John Lee, T. F. Rivers, Harrison Weir, G. W. Cummins, J. Cheal, G. Taber, T. J. Saltmarsh, W. Warren, A. Dean, H. Balderson, F. Q. Lane, C. Ross, and J. Wright.

A good portion of the time of the Committee was spent in tasting Melons, ten new varieties having been sent in the hope of their obtaining some mark of recognition, but only one was honoured with an award of merit, though two or three others might have found favour if they had been in their best condition. Very great care was taken in the examination of the fruits, each member of the Committee recording his judgment individually. The result of this was an unanimity of opinion that decidedly the best Melon was sent by Mr. Owen Thomas from the Royal Gardens, Frogmore, and hence the award above mentioned. It was the result of a cross between High Cross Hybrid and an unnamed seedling. Fruit of good medium size with a yellow rind, slightly netted; flesh greenish white, thick, melting, and remarkably juicy, sweet and refreshing. This new variety was named Frogmore Seedling.

Among other varieties of promise, and which the Committee desired to see again in better condition, were a handsome and well netted green flesh from Mr. J. Hunt, The Gardens, Ashstead Park; a large, closely netted pale green fleshed fruit from Mr. C. Ross, gardener to Colonel Archer Houlton, Welford Park, Newbury; Reigate Ruby, a distinct deep scarlet flesh Melon, rich but over-ripe, from Mr. C. Ritchings, gardener to Dr. Frankland, Redhill; and a scarlet flesh from Mr. A. Bishop, gardener to R. Burrell, Esq., Westley Hall, Bury St. Edmunds,

rich, but with a peculiar flavour that may have been the result of over-ripeness. Melons will not always ripen just when they are wanted, and Mr. Ritchings' seedling appears to ripen, very awkwardly for him, between the meetings, but may be expected to come right some day. As other varieties were passed without special comment it is scarcely necessary to particularise them. Quality is the first consideration in Melons, but they should also be good in appearance as well. Some were handsome but not good, others were neither good nor good-looking, and it is noticeable that far more fruits are placed on the table in an over-ripe than unripe condition. Mr. W. J. Myatt, Hextable, Swanley, sent six beautiful fruits of the Conqueror, such as he grows for market, no doubt selling readily, and a vote of thanks was accorded.

Mr. J. Collis, Rolls Lane, Acton, sent a dish of his new Strawberry May Queen, fruits of which were ripe in the open ground on May 20th. while those of Noble were green. The fruits were about the size of Sir Joseph Paxton, firm, and briskly flavoured. The Committee recommended that the variety be grown at Chiswick, for comparing its earliness with other varieties there. Four baskets of splendid fruits of Noble, La Grosse Sucrée, Sir Joseph Paxton, and Sharpless were sent from Frogmore. They were greatly admired, and a vote of thanks was recorded from them. The large fruits of the American variety Sharpless were tasted, but a good deal of sugar and cream would be needed to make them enjoyable. Mr. Tudway, Lower Berkley Street, sent pale, unshapely fruits of Auguste Nicaise, the heaviest weighing 2½ ozs. They were of fair quality, and a vote of thanks was passed for them. Mr. E. D. Whitehouse, Pelham Lodge, Chester Road, Kidderminster, sent fruits of a new Strawberry, Whitehouse's Seedling. They were large, but in a measure spoiled by cotton wool adhering to them. Recommended to be grown at Chiswick.

Mr. James Hudson sent from The Gardens, Gunnersbury Park, a box of very fine and well coloured fruits of Lord Napier Nectarine. They were gathered from a tree spreading 26 feet by 13 feet, bearing 250 fruits. A cultural commendation was unanimously awarded. Mr. G. Wythes, Syon House Gardens, sent seven dishes of ripe Cherries, grown on trees against walls without protection, the varieties being Early Rivers, Black Eagle, Waterloo, Tartarian, Frogmore Bigarreau, Belle d'Orleans, and Governor Wood. They well indicated the earliness of the season—the purpose for which they were sent. Mr. Wythes also sent Potatoes and Peas from the open ground, the dish of Duke of Albany Peas being very fine, and a cultural commendation was awarded for them, with a vote of thanks for the collection.

Messrs. Cooper, Taber & Co., Rivenhall, Witham, Essex, sent a dish of Duke of York Peas from a sowing in the open on February 10th. This variety was granted \*\*\* in the Chiswick trials last year, and an award of merit was passed by the Committee. Messrs. M'Hattie & Co., Chester, sent samples of M'Hattie's Hardy Winter Lettuce, large, but somewhat coarse, and no award was made. Mr. H. C. Princep, The Gardens, Hogg House, Buxted, Uckfield, sent twelve dishes of Peas in good varieties, admirably grown, and a cultural commendation was unanimously awarded.

FLORAL COMMITTEE.—W. Marshall, Esq. (in the chair); Messrs. J. Laing, R. Dean, H. B. May, J. Jennings, H. Turner, W. Bennett-Poe, C. E. Shea, C. Noble, G. Paul, E. Mawley, J. D. Pawle, P. Barr, H. Herbst, G. Gordon, R. Owen, and Rev. H. H. D'Ombrian.

Messrs. P. Barr & Son, Long Ditton, sent a large collection of hardy flowers. The best of these included some good Delphiniums, Iceland Poppies, double and single Pæonies, Irises, Lilliums and hardy Geraniums. The Spanish Irises were specially good (silver Banksian medal). Messrs. J. Cheal & Sons, Crawley, had a small collection of hardy flowers, comprising Pæonies, Aquilegias, Pyrethrums, Campanulas, and Papaver nudicaule in variety. Three boxes of Viola blooms were also sent by Messrs. J. Cheal & Sons. The flowers were fresh and bright, the best being Trentham Purple, Archibald Grant, Duchess of Sutherland, and Bloomer (bronze medal). Messrs. G. Paul & Sons, The Old Nurseries, Cheshunt, had some charming double Pæonies, which made a bright display. The most conspicuous varieties in this collection were Arethusa, Madame Loise, Lady Lenora Bramwell, Duchesse de Nemours, Prince Imperial, Mons Bouchardet, Jeanne d'Arc, and Marie Lemoine. Awards of merit were adjudged the three last named, which are described elsewhere. The same firm sent three boxes of cut Rose blooms, including the comparatively new Bourbon variety, Mrs. Paul (silver Flora medal).

Messrs. J. Veitch & Sons sent a plant of Abies orientalis aurea, for which a first-class certificate was awarded. This Conifer is described elsewhere. A basket of Cleome pungens was also sent by Messrs. J. Veitch & Sons. Lord Penzance, Eashing Park, Godalming (gardener, Mr. Baskett), sent a beautiful collection of hybrid Sweet Briars. The best of the varieties shown included Flora MacIvor, Diana Vernon, Effie Deans, Clara Mowbray, Minna, and Matilda Marchmont. These fine plants are sure to become popular when sent out to the public. Awards of merit were adjudged for the two last named varieties. Messrs. Hubert & Mauger, Doyle Road Nurseries, Guernsey, were accorded an award of merit for Gladiolus delicatissima superbissima, a pretty variety. G. F. Wilson, Esq., Weybridge, sent some Calochortus blooms cut from the open border (vote of thanks). Messrs. W. Paul & Sons, Waltham Cross, had a box of cut Roses, including the recently introduced Lorna Doone. This is a Bourbon variety, of an attractive appearance and very free flowering. The Rev. W. Wilks, Shirley Vicarage, staged blooms of a Poppy supposed to be a hybrid from P. orientale and P. rupifragum, but no award was made. Mr. C. J. Van Tubergen, Haarlem, Holland, sent blooms of Iris Lorteti and I. hispanica Mongolian, a showy yellow variety. For the first named Iris a first-class certificate



was awarded. Mr. Martin R. Smith, Hayes Common, sent blooms of Carnation Sir Charles Freemantle, for which an award of merit was adjudged. Blooms of *Richardia aurata* were sent by Mons. J. B. Deleuil, Sainte Anne, Marseilles, and an award of merit was accorded. A description of the spathes will be found elsewhere. Messrs. W. Balchin & Sons, Church Road, Brighton, sent flowers of their showy *Pyrethrum Jubilee*, and Mr. W. Smith, Basing Park, Alton, had a flower of *Lilium japonicum rubrum*. Mr. G. Prince, Oxford, sent boxes of cut Roses, comprising charming blooms of *Gustave Regis*, *Clara Watson*, *Prince of Wales*, *Miss Ethel Brownlow*, *Catherine Mermet*, and other choice Tea-scented kinds (silver medal). Mr. C. T. Druery, Fernholme, Forest Gate, had a picture of "A British Fernery," and a plant of *Athyrium filix-fœmina* var. *congesto-cristatum*, which was found growing wild in Ireland last year.

Mr. R. Dean, Ealing, exhibited a number of new border Pinks in variety, and the strain was commended. Mr. C. Turner, Royal Nurseries, Slough, sent a box of laced Pinks, and an award of merit was given for *Empress of India*, a charming variety. This is described elsewhere. Mr. G. Fry, Lewisham, secured an award of merit for *Carnation Annie Sanders*, a fine variety. Mr. A. McMillan, Trinity Cottage, Edinburgh, sent a dozen *Chrysanthemum* blooms of good size. Mrs. Irving Clarke, Mdlle. Lacroix, G. Wormig, and W. Coles were the best, but the flowers looked out of season. Messrs. Dobbie & Co., Rothesay, had *Sweet Williams* (cultural commendation) and a number of *Viola* blooms.

Mr. Anthony Waterer, Knap Hill Nursery, Woking, showed two boxes of hardy *Rhododendrons* and a box of late flowering scented *Azaleas*, which comprised a very charming exhibit (silver Banksian medal). For twelve hardy *Rhododendrons* Mr. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, the only competitor, was awarded the first prize. Messrs. E. D. Shuttleworth & Co., Peckham Rye, and Fleck, Hants, arranged a beautiful group of herbaceous plants, prominent amongst which were Iceland Poppies, *Violas*, *Lychnis viscaria splendens plena*, *Agrostemma hybrida*, and a small collection of *Roses* (bronze medal). The same firm also staged an attractive collection of flowering and foliage plants, including *Ferns*, *Crotons*, *Dracænas*, *Orchids*, and *Liliums*. A small group of *Begonias* was shown by Messrs. J. Laing and Son, Forest Hill, and formed one of the best features of the Show. The best varieties were *Bicolor*, *Alfred de Rothschild*, *Duke of Fife*, *Crimson Fringe*, *Virgin Queen*, *Lydia*, *Countess of Dudley*, *Ernest Cook*, and *Orange King*. Awards of merit were adjudged for three varieties which are described elsewhere. Mr. J. Hudson, gardener to Messrs. de Rothschild, Gunnersbury House, Acton, staged a box of *Ixora Westi*, and also one of *I. Prince of Orange*. Mr. J. Perry, gardener to J. C. Tasker, Esq., Middleton Hall, Brentwood, exhibited *Cannas* and *Roses*. Amongst the best of the former were *Francisca Kruger*, *Honorable Edith Gifford*, *Wm. Allan Richardson*, and *Madame Lambard*. The *Cannas*, which were very beautiful, comprised *Paul Bruant*, *François Corbin*, *Madame Crozy*, *Admiral Corbet*, *Antoine Chantier*, and *Victor Hugo* (silver Banksian medal).

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); Dr. Masters, Messrs. J. O'Brien, Dr. B. Crawshay, H. M. Pollet, Edward Handley, J. Douglas, E. Hill, T. B. Haywood, and S. Courtauld.

As already mentioned *Orchids* were not extensively represented. Messrs. W. L. Lewis & Co., Southgate, N., sent a small, well arranged group. *Cattleya Mendelli*, *C. Mossiæ*, *Lælia purpurata*, *Thunia Marshalliana*, *Oncidium ampliatum majus*, and the pretty *Cypripedium porphyreum* were noticeable in this contribution. Messrs. Hugh Low and Co., Clapton, also sent a collection of *Orchids*, tastefully arranged, and for which a silver Flora medal was recommended. *Cattleya Mendelli* and *C. Mossiæ* in variety were conspicuous in this group, as also was a plant of *C. gigas*. Other noticeable plants were *Cypripedium voluteum*, *C. Veitchi*, *Disa grandiflora*, and *Cattleya Schilleriana* Regnelli, a pretty form (silver Banksian medal). T. Statter, Esq., Stand Hall, Manchester (gardener, Mr. Robert Johnson), sent a collection of cut *Orchids*, comprising remarkably fine spikes of *Cattleya gigas delicata*, *C. gigas*, *Stand Hall* var. (very fine), *Lælia purpurata gigantea*, and *Lælia grandis tenebrosa*, *Stand Hall* var.

Captain Hinks, Terrace House, Richmond, Yorks, sent a small plant of *Masdevallia Veitchiana-Estradæ*, a little orange coloured flower. Messrs. F. Sander & Co., St. Albans, had a small collection, including *Lælia Oweniana* (*L. Dayana* × *L. xanthina*), *Cypripedium macrochilum*, *Batemannia Burti*, and *Dendrobium hercoglossum*. Messrs. F. Sander & Co. were awarded a silver-gilt medal for the best seedling *Orchid* not exhibited previous to January, 1893. This was a splendid hybrid named *Lælia hybrida Maynardi*, which attracted much attention. It is the result of a cross between *Lælia pumila Dayana* and *Cattleya dolosa*. The sepals and petals are rosy purple with darker veins; the lip is a rich purplish maroon, the centre being lighter. A. H. Smec, Esq., The Grange, Wallington (gardener, Mr. G. W. Cummins), had a box of cut *Lælias* and *Cattleyas* (silver Banksian medal). There were some very good forms amongst these, the best being *Cattleya Mendelli Hackbridgensis*, *C. Mossiæ Wageneri*, and *C. Mossiæ* (Mrs. Smec's variety). A plant of *Lycaste Deppei viridis*, full of flower, was also shown by Mr. Smec.

#### CERTIFICATES AND AWARDS OF MERIT.

*Abies orientalis aurea* (J. Veitch & Sons).—This is a graceful Conifer of neat growth. The young shoots are of a pleasing yellow, which enhances the value of this *Abies* considerably (first-class certificate).

*Begonia Ernest Cook* (J. Laing & Sons).—A splendid double variety, the flowers being full and of a rich crimson shade (award of merit).

*Begonia gigantea* (J. Laing & Sons).—A double variety with well-formed flowers of a pale salmon pink tint (award of merit).

*Begonia Richard Dean* (J. Laing & Sons).—A beautiful double flower of a bright orange scarlet colour (award of merit).

*Carnation Annie Sanders* (G. Fry).—This is a charming variety with bright cerise coloured flowers of excellent form (award of merit).

*Carnation Sir Charles Freemantle* (Martin R. Smith, Esq.).—A very fine bright coloured seedling *Malmaison* *Carnation*. The flowers are full, and of a brilliant red colour (award of merit).

*Gladiolus delicatissima superbissima* (Hubert & Mauger).—A pretty form, useful for decorative purposes. The flowers are medium-sized, white, the centre of each petal being blotched with bright crimson (award of merit).

*Iris Lorteti* (C. G. Van Tubergen, jun.).—This is a very distinct species. The flowers are large, the falls being dark grey covered with minute brown spots. The standards are whitish tinted rosy purple, dark veins (first-class certificate).

*Pæony Jeanne d'Arc* (G. Paul & Son).—A charming double variety with flowers of a large size. The outer petals are tinted rose, the centre being cream (award of merit).

*Pæony Marie Lemoine* (G. Paul & Son).—A large double flower of chaste appearance. The lower petals are blush, the centre ones white with a cream base (award of merit).

*Pæony Mons. Boucharlet* (G. Paul & Son).—A very full flower with bright pink petals, lighter coloured margins (award of merit).

*Pink Empress of India* (C. Turner).—A pretty laced variety, the flowers being of good form, and the rich rosy purplish markings well defined (award of merit).

*Richardia aurata* (J. B. Deleuil).—The spathes of this *Richardia* are pale yellow with a dark blotch at the base of the throat (award of merit).

*Sweet Briar Matilda Marchmont* (Lord Penzance).—A charming variety, with pale pink flowers and light centre (award of merit).

*Sweet Briar Minna* (Lord Penzance).—The flowers of this variety are large and of a delightful rosy pink shade (award of merit).

#### THE LECTURE.

At the usual afternoon meeting at the Drill Hall on Tuesday, a very interesting and instructive paper on "Hardy *Rhododendrons* and *Azaleas*," was read by Sir John D. T. Llewelyn, Bart. Mr. Bennett Poë occupied the chair. The essay was admirably illustrated with two boxes of *Rhododendrons* and one of *Azaleas* sent by Mr. Anthony Waterer, and also by some photographs of plants which are growing in the gardens of Lord Swansea, near the town of that name.

The essayist briefly reviewed the early history of the *Rhododendron*, saying to what countries they were indigenous and where the most common and earliest known species were found, Asia Minor giving us the old *R. ponticum*, for example. Winter frosts, it was remarked, were not detrimental to the plants, but those during the months of April, May, and June, which often proved so disastrous to the *Rhododendron* in this country. The growths at that period of the year were, he said, in a succulent state, and were thus peculiarly susceptible to the frost. It was the Himalayan species that the essayist dealt with at greatest length, as affording such a diversity of colours in the blooms during the spring months and such fine foliage in the winter. Many of the species were not hardy, but if seeds which had been gathered from species growing at an elevation of 9000 feet above the sea were sown, the plants would most probably prove to be perfectly hardy when raised in this country. As an example of this reference was made to the magnificent collection of Lord Swansea, almost the whole of the plants having been raised from seeds sent direct from India.

An instance of the hardiness was given, *R. Thomsoni* being the example, which, after having set its bloom buds, was subjected to three weeks' continuous frost, and was not touched. On the contrary, on the day immediately succeeding that on which the frost ceased the buds commenced to gradually expand, and produced perfect pips and fine trusses. It was a fallacy, now almost entirely removed, to think that it was essential that the soil should be of a peaty nature to grow *Rhododendrons* to perfection, for they would thrive in any fairly moist loam, with the exception of one which contained lime, this acting as a poison on them; neither would they grow well in a dry clayey soil. In such a mould it would be advantageous to fork in some dead bracken, which had a very good effect on the plants. Referring to the natural habit of the *Rhododendron* to hang down its branches to afford protection to the roots, the essayist pointed out how easy this rendered the process of layering the shoots.

In briefly referring to the *Azalea* Sir John Llewelyn said it was no longer looked upon by botanists as a distinct genus from the *Rhododendron*, but was now very generally classed with it. The old species of our gardens was *A. pontica* and what were commonly called the Ghent varieties, which though small in the pip were most useful when their sweetness and hardiness were taken into consideration. The varieties of *A. indica* were not perfectly hardy, though *A. indica alba* sometimes bloomed profusely in the open ground in favourable positions and in a propitious season. Brief reference was made to *A. mollis*, which though quite hardy was mostly seen in pots as it had proved so useful for forcing purposes.

An interesting discussion followed the paper, the question of the benefits of cow manure as a mulch for *Rhododendrons* being raised, and the essayist's opinion asked thereon, but as the lecturer had not



tried it personally he did not feel confident in recommending its general use.

A vote of thanks to Sir John Llewelyn for his admirable paper closed the meeting.

### A DAY IN THE DUKERIES.

WHEN I was living within the purlieus of the Cinque Ports the question used often to be mooted by visitors, Which are the Cinque Ports? and it was somewhat odd to find that even old inhabitants were very much at sea (as perhaps they ought to have been) as to which were the five included in the term. "Oh," it used often to be said, as if the informant was running out a sounding line, "there are Sandwich, Deal, Dover, and —," then came the halt. Were Rye and Winchelsea or Hastings to be included? and I believe that very many who live in that favoured locality can hardly tell. Indeed, I think that probably a Lord Warden may have been ignorant of the possessions over which he ruled.

his untiring zeal we are to hold the provincial show of the N.R.S. this year at Worksop, the smallest town in which it has ever been held. If he who kills fat bullocks should himself be fat, it also follows that anyone who would undertake to introduce the National Rose Society into his neighbourhood must of necessity be a rosarian, and thus I was prepared to find that whatever else might be grown at Gateford, the chief object of interest would be the Rose. Nor was I disappointed. The garden is a large old-fashioned one; one mark of this being that the walls are hollow and capable of being heated, according to a practice which was once, when glass was dear, commended to those who could afford it, but one which cheap glass and better knowledge has completely done away with. But as I have said, it was of course too early to say much about the condition and prospects of the Rose itself, but the plants looked well and healthy, and there were large battalions which ought to stand Mr. Machin in good stead on the day of battle.

These are in what may be called the Rose garden outside of the walled garden, and on a slope where they are well sheltered, although it is



FIG. 83.—THE PALM HOUSE AT WELBECK.

It is very much the same with regard to the Dukeries. What are the estates so called? "Oh, there is Clumber and Welbeck," and then often comes the hesitation. Sometimes Trentham is called in, sometimes Chatsworth—very far wide of the mark, while the difficulty is increased by the fact that there are now only the two above mentioned, the third estate (Thoresby, which once belonged to the Dukes of Kingston) having passed into the hands of Earl Manvers. These three noble estates, lying close by one another, include a large slice of the northern part of the county of Nottingham, and are in some of their characters unique.

When my kind friend and host, Mr. H. V. Machin of Gateford Hill, Worksop, proposed a drive through the far-famed Dukeries it opened out to me visions of enjoyment which I am bound to say were amply fulfilled. One's imagination—and I have not a very vivid one—conjured up the stories of Robin Hood and Little John. One thought of Friar Tuck and all the dramatis personæ of Scott's bewitching story; and then there were realities to see—princely houses and domains, grand gardens and verdant glades and hoary forests, for were there not Oaks to be seen which had existed there before the Conquest? And as the weather was fine, as it has been generally during this extraordinary season, one's anticipations of enjoyment rose high, but high though they were they were amply justified by results.

But before I say anything of the day's proceedings I would like to say something of the place from whence we made our start. Mr. Machin is, as many readers of the *Journal* know, an energetic rosarian; through

only a portion of a field which has been brought into cultivation for this special purpose. Here there are about 7000 cut-backs, and there are 12,000 stocks for next year's budding, besides two or three thousand dormant buds on dwarfs and 800 to 1000 on half-standards. Here there is an army with which some of our combatants will have to take account. I may add, too, that Mr. Machin is thoroughly alive to all the requisites for showing. The place for setting up his blooms is admirably arranged, and every requisite amply provided, so that I think we may fully expect to see him taking up a prominent position.

Our start was a false one; one of the horses took it into his head to gib, and threw himself down on the pole, to the imminent danger of snapping it. However, the coachman was master of the situation, and by very good charioting and a judicious use of the whip he succeeded in getting them off, and the mare proved herself, like many an ill-tempered one, a thorough good one to "go." She did not try her tricks again, and behaved well throughout the day.

Although we desired to have a run through the Dukeries, which involved a round of about thirty-five miles, we could not possibly hope to see everything of interest, and I believe as horticulturists if nothing else we were inclined most to Welbeck. On our way we had a view of the cricket ground where the N.R.S. is to hold its Show, a convenient and suitable spot close to the town, passing by Worksop Manor. Welbeck was, however, the Mecca of our pilgrimage. We might see the environments of Clumber and Thoresby, but we felt that there was a magnetic influence in Welbeck that drew us irresistibly



there. And what a princely place it is! It is true the house cannot compare with either Chatsworth or Belvoir, but if you were told by your guide that you were in the midst of some small principality, like those of Germany, you would not feel surprised. The outbuildings and stabling, the domestic offices, and the chapel give you the idea that you are in some very flourishing village, while all that pertains to the breeding and rearing of racehorses is carried out in the most complete manner. I am not a horsey parson, but I can admire beauty wherever I see it, and what more beautiful thing is there than the racehorse? Here then we first proceeded, and in the stables saw those three noble sires St. Simon, Johnny Morgan, and Donovan. The former of these I had a special interest in, as he was bred in my own county by the late Lord Falmouth, and is supposed to be the best horse in the world, and certainly a more beautiful creature it is impossible to imagine. The Duke is pleased to tell a story of an enthusiastic American horse trainer who came over to England for no other purpose than to see this famous horse, and when he had his desire gratified took the next steamer and returned home. He never ran for the Derby owing to the death of his noted owner, whom all horticulturists will connect with his brother, the Hon. and Rev. J. Townsend Boscawen. Having thus gratified what I hope may be considered a laudable curiosity, and have seen the perfect arrangements made for the brood mares and their foals, we sought the gardens, and there under the guidance of Mr. Horton, who has for some years ably presided over them, did what we could in a short time to see how things were done. I may at once say that the idea they gave to me was their thoroughly practical character. There are no such grand houses as at Chatsworth, but the place, by its size and the character of its cultures, reminded me much of Frogmore. Let me give one illustration of its extent. There is a quarter of a mile of Apricot wall protected by glass cases. These were in splendid condition, full of fruit, and bushels of thinnings had already been taken off, and another thinning had to follow. Vines, Peach houses, Fig houses were, if not on such a scale as this, quite in correspondence with the princely character of the place.

It is well known that the late Duke of Portland was, to say the least, a very eccentric person. Many stories are told to illustrate this, and they go to show that notwithstanding these oddities, he was a kind-hearted and thoughtful man. One memorial of his curious ways remains in the subterranean passages at Welbeck. He did not like to encounter people, consequently had the passages built that he might avoid them. One of these is two miles in length, and leads to the neighbouring town of Worksop. One of the outcomes of this is what is called the underground rosery and Palm house (fig. 83). Of course they are not absolutely so, as they must be open to receive light and air, but you reach them by an underground passage, and leave them in the same way. Roses are planted in the beds and run up the pillars. Maréchal Niel and William Allen Richardson were in full bloom. The Palm house does not contain those tall plants which have a permanent place there, as at Kew or Chatsworth, but plants which would come in suitably for decoration of halls and rooms on feast days, and could be easily moved about. Besides Palms the house contained Crotons, Dracænas, &c., all in excellent health. Another somewhat unusual feature interesting to Rose growers was the attempt to convert what is called the Bachelor's Gallery into a Rose arbour. It is about 150 feet long, covered with glass, and at intervals of 8 or 10 feet are placed large square boxes in which are planted a Tea Rose. This is trained up towards the roof, and consequently the plants have now the appearance of climbing Roses. Here were Catherine Mermet, The Bride, Climbing Niphotos, Souvenir d'un Ami, Marie Van Houtte, William Allen Richardson, and, in fact, all the best Tea and Noisette Roses. The plants numbered about sixty, and there is no doubt if they succeed it will be very pretty, but I think the success is doubtful. The plants are a long way from the glass, and I fear that the shoots before they reach it will become drawn and attenuated, and so the blooms be of little value; but it will I should imagine suit the Noisettes or Teas of the Gloire de Dijon class, but I doubt very much whether Catherine Mermet and the genuine Teas will thrive under what must be to them an unnatural state of things.

It is not always in such large places that we find an appreciation of newer introductions, but they are thoroughly recognised here, and all the best things in fruit, vegetables, and flowers are appreciated at Welbeck. Outside, in the terraces and pleasure grounds that overlook the lake there are to be found the choicest shrubs and trees, so that one feels that there is a real interest taken in the productions which fill the place in all directions.

I have not ventured to attempt anything like a full account of the gardens for two reasons—one is that the time at my disposal was too short to attempt taking anything like extended notes; the other is that I believe the general reader looks for such a description as may give him a general idea of the place rather than for detailed accounts of the number of houses, and their size. I do not think anyone can go through these extensive gardens and pleasure grounds without being struck by the perfect order and cleanliness which pervade all departments. No American blight here, as I have seen it in places claiming to be well looked after; no mealy bug in the stoves or aphides on the Roses, while vigour and health are the characteristics of the various things grown under Mr. Horton's intelligent care. Few persons have an idea of the amount of forethought necessary to manage a place like this. It is not, as some suppose, a mere routine of work. Seasons vary so that one year is no indication of another; it is of no use, for instance, looking back to the diary of 1892 to know what ought to be done now, in a

season fully a month in advance of it. Happily, Mr. Horton is not required to make "bricks without straw," and he has an efficient and sufficient staff under him.

After leaving Welbeck we drove on through the remains of Sherwood Forest, which must have been a grand place when the giants whose skeletons now adorn it were in their full beauty. Nowhere, that I can recollect, are there the remains of so large a number of these megatheriums of the forest to be found. We meet with isolated cases, such as the Headcorn Oak in the churchyard of that village, and the Fredville Oak in the demesne of that ilk in my own county of Kent; but here one sees them congregated in dozens, and these are of course but the residue of what it once contained. Probably we might have seen them to greater advantage, but then it was whispered to us "You would have had the flies," and I know something of what a nuisance they are, especially when you settle down to luncheon, as we did near the old tree that is called Robin Hood's Larder. We passed by Clumber and Thoresby, only obtaining a passing glance at them, for our time was quite run out, especially as there was a meeting of the Worksop Horticultural Society to be held in the evening to settle the details of the provincial Show, and so we hurried on, passing through the stately entrance of Thoresby, and to the town of Worksop, after having had a most successful and enjoyable day, very much enhanced by the thoughtful consideration and kindness of my host, to whom I owe it that amongst the red letter days of recent years must be added this one of "a day in the Dukeries."—D., Deal.

## PELARGONIUMS AT LEWISHAM.

### SINGLE ZONAL PELARGONIUMS.

WHEN looking over the very fine collection of these which Mr. H. J. Jones has in his nursery at Lewisham recently, I was enabled to make a selection of a dozen that seemed to me to be of exceptional excellence. Though not all perhaps new, still most of them show marked advance, have very fine pips, free blooming habits, and beautiful alike for ordinary greenhouse decoration or for the making of exhibition plants.

In this latter direction especially some change is much needed, for one tires of seeing at exhibitions so frequently old varieties that have done duty year after year. The following are very good:—Mr. D. B. Crane, a brilliant scarlet of great size and fine form; Mr. A. H. Needs, a beautiful soft light salmon, large, rounded, and of great excellence; Mr. H. Shoesmith, rich crimson scarlet, with pure white eye, very striking variety; Mrs. W. Wright, wonderfully free, flowers of a bluish magenta hue, the richest of its peculiar shade yet seen; Flamingo, a wonderful bloomer and a fine bedder, flowers scarlet, shaded orange and plum, a charming variety; Galatea, lovely shade of salmon rose, having a white blotch on the upper petals; Lady Brooke, a white-flowered variety, but there is a soft touch of pink in the centre of the flowers.

Lord Salisbury has flowers of the very largest size and of great substance, colour rich madder shaded magenta, also a fine winter variety. Maud of Wales, a pretty lilac pink, having very fine flowers; Duchess of Portland, the very best of the rich rose pinks, a flower of exceeding beauty; Sunray, clear orange scarlet, one of the most striking of this shade of colour; Rose Du Barry, soft rosy salmon shade, fine pips, and very free; and to make up an odd number I add, for a beautiful pure white, Sir Percival, a very perfect flower, and is of great value for its purity in the winter. Mr. Jones has a good stock and a wonderful variety. The selection made was from young plants all in bloom, and thus afforded the best opportunity for comparison.

### DOUBLE ZONAL PELARGONIUMS.

In this section of one of our most useful of flowering plants we find undoubted progress is made from time to time, not merely in the habit of the plants but also in size of pip and variation of colour in the flowers. A very interesting collection of these also at Mr. Jones's nursery in full bloom enables a good selection of the best to be made. The beauty as well as exceeding variety found in both single and double forms makes one to wish for opportunities to grow them well, for how rarely after all do we see plants at exhibitions that do justice, or in perfection show what specimen plants should be.

All the varieties are easily grown, and when large plants are in profuse bloom they are wonderfully attractive. At many exhibitions now it is almost alone left to Begonias to give colour; but charming as these are they even become monotonous if presented in too great abundance. Then the flowers of double Zonal Pelargoniums are of such marked value for cutting purposes. Perhaps this particular value materially helps to discount their growth as specimen plants.

The following presents a first-class selection, and some striking novelties:—Raspail Improved, a very large flowered form of the fine market variety, brilliant in colour, one of the largest pips produced; Colossus, rich reddish crimson, wonderfully fine; Mr. J. S. Phillips, colour a striking deep salmon; Mr. J. Surman, blush pink, delicately tinted and refined; Golden Rain, bright orange scarlet, the most strikingly yellow of any yet seen; Lydia, white tinted cream, having a centre of reddish pink; White Abbey, the very best pure white, blooms freely and has a good habit; Althea, rich cerise scarlet; Béaute Poitevine, very compact growth, flowers clear salmon, on stout short footstalks; La Contable, deep pink; Maggie Hallock, soft pure salmon; M. Bruant, semi-double, clear scarlet, and Sombre Horison, intense deep crimson, compact habited. Not in all cases are the English appellations



so pleasing or mellifluous as are the French ones. Common personal names are often hardly worthy of application to beautiful flowers.

#### IVY-LEAF PELARGONIUMS.

The variety *Ryecroft Surprise*, which is referred to with such approbation in your report of the Royal Botanic Show, thoroughly merits all praise. It may be said to present a distinct departure from the old long-jointed and loose-growing habit of other varieties; indeed, the fine specimen plants which Mr. Jones exhibited at the Temple Show fully demonstrated what a first-class plant it is to grow for exhibition purposes, for in that respect it vies in compactness of habit and floriferousness with the best Zonals.

I saw the entire stock of the variety the other day at Lewisham, and noted that the same remarkable short-jointed habit characterised every plant, however grown. The flowers are of the clear bright pink hue, so much valued in the market, and very double and of great size. Altogether we have in this form the best break made in the Ivy-leaf section, so far as habit is concerned.—A. D.

#### THE SPARROW—FOR AND AGAINST.

It is now many years since I attributed the destructiveness of sparrows to eating artificial food or scraps from the table. In my youthful days economy was strictly carried out with rich and poor alike, consequently there were few or no scraps. All that is changed now, and a large quantity of good food is thrown away. This food feeds rats, mice, and sparrows, and the salt it contains causes thirst.

Sparrows peck fruit buds now, whereas fifty years ago, when they had access only to natural food, did not meddle with the buds. At all events they are more destructive on buds near towns than in the country. I never saw the sparrows peck Croci. The yellow Crocus I have seen torn to pieces, but the depredators were slugs, and not sparrows. Oats when beginning to ripen are reduced in bulk by them, and building their nests in some places are unsightly and often stop water pipes, all of which tends to raise the ire of many individuals who threaten their destruction.

My garden is between two others full of pests, the occupiers of which take no steps whatever to reduce, consequently I have to keep up a perpetual warfare to have the slightest chance to enjoy either fruit or flowers. The sparrow comes to my aid. This year the trees, bushes, and hedges were swarming with various caterpillars. The sparrows for the past fortnight have kept up a continual warfare with them, with the result that the verdure of all mentioned is preserved. The numbers were so great that had the pests not been destroyed scarcely would a vestige of leaf been left.

On May 13th I saw a sparrow pick from the ground a large grub of the daddy-longlegs and flew to a Morello Cherry tree. In less than half a minute it killed six caterpillars and fed its young with them. It then flew down and pecked heartily at the blades of grass. All this occurred in less than five minutes and within 6 feet or less of me.

The foregoing are glimpses of both sides of the question. Let him say, who can do so wisely, whether the sparrow should live or die.—W. T. B.

[Mr. Witherspoon sends a communication on this subject, but it did not arrive in time for insertion in our present issue. He disclaims any intention of discourtesy to "W. R. Raillem" (page 444), and regrets if he conveyed that impression.]

#### A VISIT TO WALTHAM.

WALTHAM is a region which may be described as equally interesting to the lover of Nature, the horticulturist, the antiquary, and the historian. In Waltham Abbey, it is generally supposed, repose the bones of the heroic English king who fought and died at Hastings. Theobald's Court, which is in the immediate vicinity, was the residence of King James the First of England and Sixth of Scotland; the famous Cross at Waltham was consecrated to Eleanor, an English queen; the chimes of Waltham Abbey suggested to Tennyson, when he was residing at High Beach, the immortal passage in his "In Memoriam" beginning—

"Ring out, wild bells, to the wild sky,  
The flying cloud, the frosty light;  
The year is dying in the night;  
Ring out, wild bells, and let him die."

I was chiefly attracted Walthamwards by the magnetic personality of a venerable and gifted horticulturist, Mr. William Paul, F.L.S., who has his world-famous rosarium there. Most gladly did I comply with his kind invitation to pay him a visit during the flowery month of May. Waltham is easy of access from the modern Babylon; if you are fortunate enough to get a fast train at Liverpool Street Station you may be there in half an hour. Such, however, was not my good fortune, for my train stopped at nearly every station; yet the time passed quickly, for the morning was fine, and there were many objects of interest by the way.

Arrived at Waltham I found the veteran rosarian awaiting me at the station; and he at once conducted me through his great rosarium. There were born those exquisite Roses which I am proud to possess, the *Beauty of Waltham*, the *Pride of Waltham*, *Magna Charta*, *Ella Gordon*, the *Crown Prince*, and many others of equal interest and renown. There is perhaps in Europe no greater raiser of new and valuable Roses than Mr. Paul—a fact adequately realised and admitted by all the leading European rosarians of the last half-century, such as Guillot,

Verdier, Levet, Lacharme, Margottin, Labbay, and Liabaud, many of whom have been his intimate personal friends. He has many interesting reminiscences of these, of which one of the most memorable is connected with the first introduction by himself into England of the "*Maréchal Niel*." Another celebrated and exceedingly valuable French Rose which Mr. Paul was the first to popularise in this country, where it has reached an absolutely universal circulation, is *Gloire de Dijon*, a flower possessing at least five different shades of colour, of exquisite fragrance, immense substance, and marvellous durability. Among the famous Roses of which Mr. Paul has been the "raiser" (for that is the technical and unbeautiful term) I may mention *Beauty of Waltham*, *Lord Clyde*, *Duke of Edinburgh*, *Duchess of Albany*, *Duchess of Bedford*, *Glory of Waltham*, *Magna Charta*, *Marchioness of Lorne*, *Pride of Waltham*, *Queen of Queens*, *Star of Waltham*, *Ella Gordon*, *Crown Prince*, and *Little Gem*, the last-mentioned being a crimson Moss of remarkable beauty. Of his more recent productions, which he showed to me at Waltham in magnificent bloom, are *Sappho*, *Clio*, *Corinna*, *Duke of York*, *Salamander*, and *Princess May*. His *White Lady*, a daughter of *Lady Mary Fitzwilliam*, is a Rose of remarkable substance, size, and beauty, though of dwarf habit (a great recommendation); it is exceedingly prolific, and its fragrance is that of the *Malmaison* *Carnation*. I had recently the pleasure of highly recommending this superb Rose for extensive cultivation to Mr. Harry Turner, when he was showing me his "*Royal Nurseries*" near Windsor Castle, where he grows to perfection countless masses of Regal Pelargoniums and Azaleas, 70,000 plants of the finest *Carnations*, and 200,000 Rose trees. I have on the other hand been commending to Mr. Paul, having seen it in all its integrity at the Royal Nurseries (well worthy of such a name), Mr. Turner's very beautiful and profusely floriferous *Polyantha* Rose, which I doubt not the Waltham rosarian will do much to popularise.

During my memorable visit to his rosarium Mr. Paul gave me much interesting information regarding the origin or parentage of his Roses. He told me, for example, that *Beauty of Waltham* and the *Duke of Edinburgh* were raised from seed of *Général Jacqueminot* between 1862 and 1868. His *Duchess of Albany* is, if that be possible, an improved *La France*, and owes its characteristics, which cannot be over-valued, to that divine Rose, which, like some of our Orchids, *Cattleyas*, *Lælias*, and marvellously lovely *Dendrobiums* (of which perhaps the fairest, sent to me by the Duchess of Sutherland, are glowing before me as I write) almost too beautiful for earth. My open-air substitutes for those tropical flowers at the conservatory are *Irises* and *Aquilegias*; of the latter I possess all the most precious and most graceful existing varieties, including *californica*, *cærulea hybrida*, *canadensis*, and *chrysantha*.

Mr. Paul is not a cultivator, unless under glass, of Japanese, Indian, or Levantine Lilies, as at Waltham (to use the language of Mr. Herbert Spencer) they find themselves "out of correspondence with their environments." They do not find there a congenial soul. Here, in Kirkmaiden, they simply luxuriate, as if they were in Japan, or on the lower slopes of their native Himalayas. I grow them among Roses, and the effect, I anticipate, will be remarkably fine when *L. longiflorum giganteum* blooms contemporaneously with the *Duchess of Bedford*, *L. candidum* with *La France*, *L. speciosum Krætzleri* with *Victor Hugo*, and *L. auratum* with Mrs. Paul.

Roses are by no means at Waltham the predominating speciality, for flowering trees and shrubs of all kinds are everywhere, at least equally conspicuous and impressive. Mr. Paul is especially successful as a cultivator of the *Camellia*, which grows in his extensive Waltham conservatory to a height of 15 feet, and flowers most profusely in early spring. He has also made a special study of the *Hollyhock*, regarding which there is much admirable writing in his "*Contributions to Horticulture*," his latest work, dedicated to Dr. Hogg, an old friend of his, and a great writer on fruit, whom I had the gratification of meeting at Waltham. From him also I received exceptional kindness, which I take this opportunity of gratefully recognising. Mr. Paul resides at Waltham House, not far from his rosarium, a beautifully situated residence, which he purchased from Anthony Trollope, the distinguished novelist, twenty years ago. To it is attached an exquisitely shady, antique garden, full of unexpected beauties, much frequented by genial horticulturists, ring doves, merles, and nightingales; also let me add, by my favourite thrush, who in that region of simplicity, sincerity, and unobtrusive kindness naturally finds himself at home. If a certain sardonic English poet had lived in the present period, and visited Waltham House, he never would have written that memorable deliverance on the happiness of men—

"Man never is, but always to be blessed."

—DAVID R. WILLIAMSON.

#### VENTNOR AND BONCHURCH (ISLE OF WIGHT) SHOW.

MAY 31ST.

THE first Exhibition of the season, and the twenty-seventh of the Undercliffe Horticultural Society, was held on the above date. A more charming place than the grounds of East Dene, Bonchurch, the seat of J. Snowden Henry, Esq., J.P., D.L., could scarcely be imagined. Situated at the foot of high sloping downs and rising precipices, richly embellished with magnificent specimens of choice flowering shrubs and overhanging foliage plants, with sheltering nooks and sloping lawns running down to the edge of the sea made a delightful promenade for the many visitors to the Exhibition.

The Exhibition was held in three tents, and the vagaries of this



exceptional season were noticeable amongst the exhibits. Azaleas were nearly over, Achimenes and Cockscombs well shown, Strawberries, Cherries, Peas and Potatoes from the open very plentiful and fine, Grapes and Melons well coloured and ripe. For six stove and greenhouse plants, Mr. J. Churchill, gardener to J. Snowden Henry, Esq., was first with *Clerodendron Balfourianum*, *Bougainvillea glabra*, *Rhynechospermum jasminoides*, *Ixora Duffii*, *Swainsonia galegifolia alba*, and an Azalea. Mr. F. Orchard, gardener to H. Michell, Esq., J.P., Undermount, Bonchurch, a very close second, having a good plant of *Bougainvillea glabra*, *Rhynechospermum jasminoides*, *Clerodendron Balfourianum*, *Hæmanthus coccinea*, Azalea Triomphe de Paris, and Achimenes Mauve Queen. Mr. W. Sheath, gardener to Miss Mitchell, Macrocarpa, Ventnor, third. For a single specimen stove Mr. Orchard was first with a fine plant of *Clerodendron Balfourianum*. Mr. Sheath was second with *Anthurium Scherzerianum*. For six fine-foliage plants Mr. Churchill was first with three splendid Palms, *Maranta zebrina*, *Pandanus Veitchii*, and *Caladium bicolor splendens*. Mr. Sheath second with two good Crotons amongst others. The class for three plants was well represented.

There was a good and close competition for six stove and greenhouse Ferns. Mr. Churchill was first, the best being two *Gymnogrammas* and *Adiantum concinnum*. Mr. F. Orchard was second with a fine *Davallia Mooreana*, *Davallia dissecta*, and *Adiantum cardiochlaenum* and *A. cuneatum*; Mr. Russell, gardener to Colonel Goodechild, The Grange, Bonchurch, being third. For a basket of plants Mr. Russell gained first prize. For a group of flowering and foliage Mr. W. Sheath showed a very tasteful arrangement containing some *Odontoglossums*, *Caladiums*, and *Pelargoniums*, and was awarded first, Mr. Cosh, gardener to Marcus B. Huish, Esq., being second. For four Orchids Mr. Churchill was first with *Aërides Fieldingi*, *Cypripedium barbatum*, *Cymbidium Lowianum*, and *Cattleya Mossiae*. Mr. Russell was second, and showed amongst others a very fine and showy plant of *Lælia gigantea*. In the class for Achimenes Mr. F. Orchard was first, the plants in pans well grown and full of flower. For six Cockscombs Mr. F. Orchard was also first with good combs; Mr. Richards, gardener to A. Innes Vine, Esq., second. The Show and Zonal *Pelargoniums* were well represented, Mr. W. Sheath taking the first prize in each class with good, well-flowered plants. In the class for *Calceolarias* Mr. Orchard was first and Mr. Churchill second. The flowering *Begonias* was well shown, Mr. Sheath showing well. The *Fuchsias* were weak, Mr. Sheath showing the best.

For twenty-four cut Roses, Mr. Norton, gardener to the Hon. Mrs. Pelham, was first; and in the corresponding class for twelve blooms Mr. F. Orchard was awarded first prize. For a basket of cut flowers Mr. A. Richards was first with a large basket, arranged with a cross handle. This was drawn for in the evening, and the result was a good round sum added to the funds. Mr. Russell was first for a well arranged hand bouquet.

There was a good exhibition of fruit and vegetables. For Grapes Mr. A. E. Day took the first prize, and Mr. F. Orchard second. For a dish of fifty Strawberries Mr. Orchard showed a fine dish of Laxton's Noble, gathered out of doors, and was awarded first prize; Mr. Churchill was second with a good dish of the same variety. The Tomatoes shown by Mr. Churchill were very fine, and secured the first prize. In the large class for vegetables Mr. Richards was first, Mr. Orchard second, and Mr. Churchill third, all showing well. There were some good dishes of Peas shown, Mr. Orchard being first with William I.; Mr. Richards second with William Hurst. For twelve Potatoes, Mr. Churchill was first with a seedling; Mr. Richards second with Come to Stay. The other classes, including those set apart for amateurs and cottagers, was very creditably filled. Mr. Stears worked hard as the Hon. Secretary to make it a success, and Mr. Facey was staging Superintendent, and both must be congratulated on the excellent arrangements and display.—C. ORCHARD, *Bembridge, I.W.*

## BATH AND WEST OF ENGLAND AGRICULTURAL SOCIETY'S (GLOUCESTER) SHOW.

HORTICULTURAL DEPARTMENT.—MAY 31ST TO JUNE 5TH.

THIS section of the above was generally acknowledged to be the best ever held by the Society, occupying a larger tent than in former years. The weather was beautiful on the opening day, and the tents were crowded with visitors, making it rather difficult to take notes. On entering, a group of Tree Ferns, foliage and flowering plants, arranged by Messrs. Roberts & Starr of Gloucester, was conspicuous. Next to these came a fine mass of colour from the *Pelargoniums* of Mr. C. Turner of Slough. The plants were well grown, and most profusely bloomed. Adjoining the *Pelargoniums* was a really grand collection of *Gloxinias* from Messrs. Sutton & Sons, Reading. The plants were large and remarkable for the handsome foliage and flowers of great size and splendid colour. Messrs. Heath & Son, Cheltenham, had a very fine collection of flowering plants, including some good Orchids, also foliage plants in great variety, and cut flowers. Messrs. R. Smith and Co., Worcester, staged some of their well known Clematis and splendid Kalmias, *Rhododendrons*, herbaceous flowers, and *Pæonies*, also a fine collection of Iris blooms equal to some of the best Orchids in point of beauty.

At the end of the tent Messrs. R. Veitch & Sons of Exeter erected some rockwork with a pool and waterfall, all arranged with good taste, and occupied with plants suitable for the position, if on a gentle-

man's place. The same firm had a well-bloomed collection of Orchids. Messrs. Kelway & Son, Langport, had some extra good stands of *Amaryllis*, *Pæonies*, *Gaillardias*, *Delphiniums*, and *Pyrethrums*. Roses were well shown by Mr. Conway Jones and Messrs. G. Cooling & Sons, Bath, both putting up good blooms, especially for the time of the year.

Down the centre of the tent masses of stove and greenhouse plants were arranged by the following gentlemen:—Messrs. J. Laing & Son, their stand containing fine *Begonias*. Next came a well arranged group of fine plants from W. R. Baker, Esq. (Mr. J. Aplin, gardener), Hasfield Court, Gloucester. Lord Fitzhardinge, flowering and foliage plants, well grown, and put up with good taste. Sir J. Dorrington (gardener, C. Savegar) had a similar collection. Also Mrs. Gambier Parry (gardener, Mr. Sowray), who had also a grand collection of Stag's-horn Ferns.

Mr. J. Cypher, Cheltenham, had a group of his well known Orchids, making a beautiful display, attracting much attention. T. W. Butt, Esq., Arle Court, Cheltenham, had an excellent collection of Orchids and other plants, reflecting great credit on Mr. Marsh, his gardener. Other highly meritorious groups were arranged by Sir W. F. Guise (gardener, W. Cross), Sir Lionell Darvell (gardener, Mr. Greenway), H. St. V. Ames, Esq. (gardener, W. K. Bannister). The two latter had splendid Carnations in their group. Messrs. Jefferies & Son also staged a collection of Crotons, *Caladiums*, *Begonias* and other plants.

Fruit was not extensively shown, but it was very good. Canon Coventry (gardener, Mr. Frowde) had some extra fine Black Hamburg and Buckland Sweetwater Grapes, also fine Noble Strawberries. Mr. G. Parry had a stand of well-finished Black Hamburg Grapes. Lord Fitzhardinge had some large Melons, Strawberries, and Hale's Early Peach. C. Lee Campbell, Esq. (gardener, Mr. S. T. Wright), had Hero of Lookinge Melons, Royal George and Early York Peaches; also Glewston Court Tomatoes, all of which were of large size and fine colour. Seedsmen's stands were as usual to the fore outside, attracting much attention.

## LEICESTER PANSY SOCIETY.

JUNE 3RD.

THE second annual Exhibition of this Society was held on the above date in the lecture hall of the Liberal Club, and was opened by Alderman Sir Thomas and Lady Wright before a large number of ladies and gentlemen. The Show as a whole had not the bright appearance of last year, as then many valuable plants were lent "not for competition;" whereas this year the Show was almost entirely for competition. Great headway has been made with the Pansy during the past year, as fully three times the number were exhibited, and they of a far superior quality. In the non-competition exhibit of Mr. W. Sydenham, Tamworth, were many ideal Pansies, including Emma Stuart, James Campbell, Seedling, Tamworth Yellow, A. H. Murray, Thomas Garrett, Tamworth Hero, May Hind, Betsy Kelley, Mr. D. Johnson, Maggie M. Paul, John Coutts, Mrs. W. Sydenham, Tamworth Yellow, Maggie A. Scott, Seedling, Lieut.-Col. Hare, Mrs. W. Sydenham, John Taylor, Arab, Betsy Kelley, Arthur Eaton, Maggie Pender, Tamworth Yellow, Seedling, Alex. Smellie, Edith Crossley, Maggie R. S. Cocker, Tamworth Yellow, Arthur Eaton, Andrew Tarter, Arthur Eaton, and Betsy Kelley.

The Parks Committee (Mr. J. Burn, Abbey Park), lent a fine collection of Pansies and Clematises which added much to the attraction of the Show, also a number of shrubs in pots and small decorative plants. Mr. T. Fielding Johnson of Brookfield, and Mr. J. Wright of Granby Street, each sent some good Ferns and foliage plants.

The following are the awards of the Judges:—Class 1 (twenty-four Fancy Pansies).—First, Mr. Whitehead. Second, Mr. G. East. Class 2 (twelve ditto).—First, Mr. Yeomans. Second, Mr. Jordan. Third, Mr. Dingley. Class 3 (six ditto).—First, Mr. Yeomans. Second, Mr. Jordan. Third, Mr. Dingley. Class 4 (six ditto).—First, Mr. East. Second, Mr. Dingley. Third, Mr. Bowles. Class 5 (twelve Fancy Pansies; open).—First, Mr. W. Sydenham of Tamworth. Second, Messrs. Biddles & Co., Loughborough. Class 6 for the most tastefully arranged centre stand (for a dinner or supper table). First, Mr. Bell. Second and third, Bowles. Class 7 (eighteen Fancy Pansies).—First, Mr. East. Second, Mr. Whitehead. Class 8 (twelve Show Pansies).—First, Mr. Whitehead. Second, Mr. Jordan. Class 9 (twenty-four Fancy Pansies; open to all).—First, Mr. W. Sydenham. Second, Messrs. Biddles & Co. Class 10 (for the premier bloom in the Show).—Mr. Jordan. Class 11 (for best nine bunches of cut flowers).—First, Mr. Bell. Second, Mr. Barry. Third, Mr. Bowles. Class 12 (for best collection of cut flowers, outdoor grown).—First, Mr. Wright. Second, Mr. Bowles. Third, Mr. East. Class 13 (for a collection of Pyrethrums).—First, second, and third, Mr. Bowles.

In classes 5 and 9 Mr. W. Sydenham was first with John Taylor, David Rennie, Arab, Tom Travis, Louis Wierter. A. H. Murray, Tamworth Yellow, Mrs. Winstanley, Mrs. A. Irvine, Arthur Eaton, Mrs. Maxwell, Maggie M. Phail, Agnes Mabel, Mrs. D. Johnstone, Lieutenant M. Isaac, Edith Crossley, Rev. Gresely, Betsy Kelley. Mrs. C. L. Carnegie, Thomas Garrett, May Hind, John Coutts, and Earl of Warwick, and was closely followed in each case by Messrs. Biddles & Co., Loughborough. The premier bloom (amateur) was in Mr. H. Jordan's stand, a fine Tamworth Yellow.



Mr. A. Bell, gardener to S. Bennett, Esq., in class 11 exhibited some good blooms of *Allamanda grandiflora*, *Lælia purpurata*, *Dendrobium Dalhouseanum*, and *Odontoglossum vexillarium*. Mr. G. Barry was second, and Mr. J. Bowles third.

The outdoor flowers were fresh and well staged, the first going to Mr. Wright, whose stand contained some good *Delphiniums* and *Rhododendrons*. Mr. J. Bowles was second.

The table decorations were rather limited, as only Pansies, Fern, and moss were allowed, the first falling to W. Bell with a very tastefully arranged centre stand, and the second to Miss Bowles.

In the unavoidable absence of Mr. Whitehead, the Hon. Sec., Mr. W. Bell, Hon. Sec. *Chrysanthemum Society*, undertook the management.

## LONDON PANSY AND VIOLET SOCIETY.

JUNE 6TH.

THE first Exhibition of this recently formed Society was held at the Drill Hall, in connection with the meeting of the Royal Horticultural Society, on the above date. Notwithstanding the prolonged drought the flowers on the whole were exceedingly good, and the Executive Committee may be congratulated upon their first attempt to popularise the Pansy in the south. This doubtless will be done if the Society continues its work, and holds a series of annual exhibitions such as the one now reported. An expert Scotch grower expressed his opinion that it was the best Pansy show ever held out of Scotland.

### OPEN CLASSES.

Messrs. Dobbie & Co., Rothesay, were awarded the first prize in the class for trade exhibits of Violas and Pansies. This collection, which was a very beautiful one, comprised amongst the Violas *Duchess of Fife*, *Royalty*, *Mrs. Hay*, *Bullion*, *Lucy Ashton*, *Crimson King*, *Tory*, *Peter Barr*, *Dorothy Tennant*, *Archie Grant*, *Favourite*, *Annie King*, *Ariel*, *Countess of Kintore*, *W. Niel*, *Prince of Orange*, *White Duchess*, *Sheila*, *Countess of Hopetoun*, and several fine seedlings. The Pansies were grand, the blooms being very substantial, and the colours varied. Messrs. Wm. Paul & Son, florists, Bridge of Weir, N.B., were accorded the second prize for a very meritorious collection. Prominent amongst the Violas in this exhibit were *Blue Cloud*, *Lady Amory*, *Champion*, *Ada Adair*, *Bullion*, *Columbine*, *Countess of Kintore*, *Lord Elcho*, and *Countess of Hopetoun*. The Pansies staged in this stand were very fine. The third prize went to Mr. Andrew Irvine, Kyles of Bute, N.B., who staged a good selection. Messrs. Dicksons & Co., Waterloo Place, Edinburgh, competed in this class.

Mr. J. Smellie, Bushy, N.B., was deservedly awarded the first prize in the class for forty-eight Fancy Pansies in distinct varieties. The stand comprised *David Rennie*, *Mrs. D. Johnstone*, *J. Taylor*, *James Watson*, *Tom Thumb*, *Lord Hamilton*, *Henry Irving*, *J. Coutts*, *May R. S. Cocker*, *C. B. Renshaw*, *Mrs. Train*, *Mrs. William Watson*, *Maggie A. Scott*, *Jeannie Paterson*, *Mrs. R. Niven*, *Seedling*, *James S. Irvine*, *Mrs. F. A. McGill*, *Maggie Watson*, *Robert Jamieson*, *Alex. Niveson*, *George Anderson*, *Archie Buchanan*, *James Simkins*, *Annie Ross*, *Maggie McPhail*, *Mrs. Dallan*, *A. H. Murray*, *Mrs. J. Downie*, *Jeannie P. Tait*, *William Watson*, *Marmion*, *J. Allen*, *James Campbell*, *Miss Abercrombie*, *Agnes Mabel*, *Mrs. C. E. Scarce*, *Mrs. J. Currie*, *Thos. Gardner*, *Helen Christie*, *Mrs. R. Thompson*, *Mrs. G. P. Addie*, *Donald Morrison*, *Alex. Smellie*, *Jno. Bolton*, *Helen McGregor*, *Alex. Smith*, and *William B. Smellie*. Mr. Alex. Bailey, jun., Silksworth Lane, Sunderland, was accorded the second prize for a very creditable exhibit; Mr. Alexander Lister, Rothesay, N.B., being third.

In the class for twenty-four Fancy Pansies, distinct, Mr. J. Smellie was again first. His stand included *D. Rennie*, *Mrs. D. Johnstone*, *Lord Hamilton*, *Mrs. D. Allan*, *Maggie McPhail*, *C. B. Renshaw*, *Wm. Watson*, *Jas. S. Irvine*, *A. H. Murray*, *C. N. Johnstone*, *Mrs. R. Thompson*, *Thos. Gardner*, *Emmeline*, *Mrs. W. Watson*, *Mrs. J. Ritchie*, *Jeannie Tait*, *Mrs. Carnegie*, *Jas. Campbell*, *Mary Lawrence*, *Mrs. R. Niven*, *Miss Paterson*, and some seedlings. Mr. A. Lister was second, and Mr. Matthew Campbell, Blantyre, N.B., third. For twelve distinct varieties of Fancy Pansies Mr. J. Smellie was first with a very fine exhibit, including *Jno. Allen*, *Mrs. Wm. Watson*, *Mrs. D. Johnstone*, *Maggie McPhail*, *Lord Hamilton*, *Jas. Simkins*, *Mrs. R. Thompson*, *D. Rennie*, *Mrs. A. Irvine*, *Mrs. F. A. McGill*, and *Mrs. W. S. Young*; the second and third prizes being awarded to Mr. A. Lister and Mr. A. Bailey, jun., in the order named.

Mr. A. Lister gained the first prize for twelve Fancy Pansies, one variety, staging *Tom Travis* in grand form. Mr. M. Campbell was second with *Lord Hamilton*, and Mr. A. Bailey, jun., third with *David Rennie*. There were five competitors in this class. For twelve unnamed seedlings, Fancy Pansies, Mr. Lister was also awarded first prize for a meritorious exhibit, Mr. Smellie being second, and Mr. Irvine third.

In the class for twelve Show Pansies, distinct, Mr. J. Smellie was first, staging fine examples of *P. C. D. Boswell*, *Mrs. Brown*, *Dr. Inch*, *G. C. Gordon*, *Mrs. J. Hunter*, *Mary Campbell*, *Minnie Irvine*, *Harry Paul*, *J. Barrowman*, and *Miss E. Bolton*. Mr. A. Lister was second, and Mr. M. Campbell third. The special prize offered by Mr. W. Sydenham, Birmingham, for six Pansies in three varieties, was awarded to Mr. J. Smellie with *Tamworth Hero*, *Emmeline*, and *Tamworth Gem*. Mr. Campbell gained the prize for the best Fancy Pansy in the open classes, staging *Lord Hamilton* in magnificent form.

For twenty-four sprays of Violas the first prize was awarded to

Mr. J. Nicholson, Sewardstone. His stand, which was a most charming one, included *Gold Flake*, *Rose of Morn*, *Dawn of Day*, *Peter Barr*, *Skylark*, *The Mearns*, *Countess of Hopetoun*, *Lady Dinah*, *Lord Elcho*, *Doris*, *Tory*, *Lord Polwarth*, *Countess of Kintore*, *Champion*, *Duchess of Fife*, *Daldowie*, *Wm. Niel*, *Lilias*, *Archie Grant*, *Virginalis*, *Wm. Bellamy*, *Clarinda*, and two seedlings; Mr. Bailey being second with a creditable stand. In the class for twelve sprays of Violas, in distinct varieties, Mr. J. Smellie was first, staging *Stanley*, *Wonder*, *York* and *Lancaster*, *Lady Dundonald*, *Dorothy Tennant*, *Mrs. H. Bellamy*, *Lucy Ashton*, *Peter Barr*, *Mrs. Frater*, and seedlings. Mr. A. J. Rowberry, South Woodford, was second, and Mr. Bailey, jun., third. For six sprays of rayless Violas Mr. Geo. McLeod, Chingford, was awarded the first prize for a fine exhibit, which included *Rose Queen*, *Sylvia*, *Blush Queen*, *Violetta*, *Geo. McLeod*, and *Sylvia's Rival*.

### AMATEURS' CLASSES.

Mr. Pether, Walthamstow, was awarded second prize for twenty-four Fancy Pansies. The best blooms were *G. Anderson*, *Constance*, *John Bryce*, *Neil Galliad*, and *A. Buchanan*. Mr. A. McWilton, Leytonstone, was awarded first for twelve Fancy Pansies, one variety, showing good blooms of *Neil Mackay*. Mr. A. J. Rowberry, South Woodford, was placed first for six Fancy Pansies. The best Pansy in this section was a fine bloom of *Tom Travis*, shown by Mr. Rowberry. Mr. H. A. Needs was second in this class, and Mr. Bruce Cook, Chingford was third. Mr. H. A. Needs, Woking, was first with twelve sprays of Violas, Mr. A. J. Rowberry second, and Mr. E. J. Pether third.

Mr. Rowberry won the first special prize offered by Messrs. Dobbie and Co., Rothesay, N.B., for twelve sprays of Violas, Mr. E. J. Pether being second. Mr. Rowberry was again first for six sprays of rayless Violas. The best six sprays of Viola, three varieties, were staged by Mr. Bruce Cook, Chingford.

For twelve Fancy Pansies, distinct, Mr. A. J. Rowberry was first. Amongst the best of his blooms were *Mrs. J. Downie*, *H. C. Hozier*, *Alex. Ollar*, *W. Dean*, *Don Gray*, *Niel Mackay*, and *W. Rennie*. Mr. H. A. Needs, Woking, was second; and Mr. H. W. Hitch third.

Mr. B. Cook was first in the class for six sprays of Violas, distinct, showing a charming collection. Mr. Edward Fuller, Kelvedon, was awarded the second prize for a stand of Violas in six distinct varieties, three blooms of each, his exhibit being a very beautiful one. Mr. A. McWilton, Leytonstone, was second; and Mr. G. H. West, Chingford, third.

Mr. A. Lister showed a grand collection of Show and Fancy Pansies, not for competition. Mr. J. Smellie staged a fine collection, as also did Mr. A. Bailey, jun.



### FRUIT FORCING.

**VINES.—Early Houses.**—When the Grapes are cleared the inside borders should be kept moist, giving a thorough supply of tepid liquid manure to weakly Vines. This will assist to plump the buds and encourage root action, so essential to the preservation of the foliage in health, and tend to activity of the laterals—the best preventive of premature ripening of the foliage. Thorough ventilation will be necessary constantly, but in cold weather it must be moderated, leaving enough to ensure a circulation. Cleanse the foliage of dust and insects, especially red spider, by thorough syringing, and repeat as necessary to keep the old or main leaves healthy. Fresh laterals will be produced under favourable conditions, and an even growth should be maintained all over the Vines, pinching the gross and encouraging the weak, but keep them clear of the principal leaves which nourish the buds at their base. The mulching or covering having been removed from the outside border, and sufficient of the lighter part left to protect the roots, an application of liquid manure may be given, but avoid making the soil sodden.

**Houses Started Early in the Year.**—Vines started at the new year, and being early varieties, now have the fruit ripe, which will keep better and longer in a moderately moist atmosphere than in an arid one, provided it is not close, sufficient ventilation being given to ensure a circulation of air. The floors and borders should be damped occasionally, and the roots must not lack moisture. A double thickness of herring not drawn over the roof will aid *Hamburgh Grapes* in retaining their colour. Allow a moderate extension of the laterals, but keep gross growths well under so as to cause an equal distribution of the sap, and maintain a minimum temperature of 60°.

Vines that were started about the new year for the first time, and have been brought forward gently, will have the Grapes well advanced in ripening, and should have a circulation of warm, rather dry air constantly, increasing the ventilation early. Excessive evaporation must be prevented on hot days by damping the floors and borders, allowing the temperature to fall to 65° or 60° on cold nights, with sufficient ventilation and heat in the pipes to prevent moisture condensing, and



maintain a temperature of 70° to 75° by day. If there is likely to be any want of finish allow the Vines time by giving as long a rest at night as possible. Examine the borders, and if there is any lack of moisture give a thorough supply of water in the morning of a fine day, and when soaked in mulch with a little light material.

**Early Muscat Houses.**—Vines of the Muscat of Alexandria started at the new year are now ripening their crops, and require a dry condition of the atmosphere, but extreme aridity causes the foliage to fall a prey to red spider. Being gross feeders do not allow any lack of moisture in the soil, but feed with tepid liquid manure or top-dressings of phosphate, potash, and ammonia or nitrogenic substances. Muscats seem to require more phosphoric acid than Sweetwater Grapes, say five parts superphosphate (bone) and two parts nitrate of potash (saltpetre finely powdered), with a little sulphur, say one part gypsum, mix, and apply at the rate of half a pound per square yard after making the border moist with tepid water, and afterwards wash the top-dressing in moderately. A light mulching of stable manure will supply similar elements, slowly conserve the moisture, and compensate for the drier condition of the atmosphere. Lateral extension at this stage is the best safeguard against shanking, along with a steady temperature and the avoidance of sudden fluctuations and depressions. Maintain a night temperature of 70°, falling 5° through the night, ventilate early, but allow the heat to rise to 80° or 85° with a little sun and more air, and 90° to 95° with sun in full force, regulating the ventilation accordingly. The old leaves of Muscat of Alexandria are more liable to be scorched under sudden atmospheric changes than any other variety, especially after a dull, cold period. In very bright weather a single thickness of herring net may be drawn over the roof lights, which breaks the sun's rays sufficiently, and the berries will not be scorched or scalded on the upper side, as sometimes occurs in the early stages of ripening. Give a little air at night to prevent the condensation of moisture, and increase early in the day, so that the berries warm equally with the surrounding atmosphere.

**Midseason Houses.**—Grapes that have stoned are swelling rapidly and require abundant supplies of water and nourishment. Native guano is a useful manure for Vines. Blood formed into a paste with wood ashes is also good. There are two ways of making it:—1, Collect the blood in a vessel, add the wood ashes dry and a little at a time, stirring until the whole becomes a stiff mortar-like mass and dry. Use a good handful per square yard when the Vines start into growth, again when the berries are thinned, and a third time when the stoning is completed or the Grapes change colour for ripening. 2, Dry the blood, grind it, and add an equal quantity of wood ashes, applying the mixture as above. The advertised manures, however, save trouble, and are handy, also first-rate for their respective purposes, all being useful for accelerating and sustaining the crops. Some growers prefer a home mixture, which, according to M. Ville, should contain phosphatic, potassic, and nitrogenic elements, but he adds sulphur and lime in sulphate of lime (gypsum). A good mixture may be formed of three parts bone superphosphate, two parts powdered saltpetre, one part ground gypsum, mix and use from quarter to half pound per square yard. These artificials are mainly alluded to because they never impart an unpleasant taste to the Grapes.

The watering, where the borders are well drained, will require to be continued at fortnightly intervals, or oftener where limited, until the Grapes are somewhat advanced in colouring, when it will suffice to keep the soil moist. A little ventilation should be provided constantly at the apex, increasing it early in the day, closing with a genial condition of the atmosphere. Fire heat will only be necessary to secure 60° to 65° at night and 70° to 75° by day, keeping through the day at 80° to 85°, and closing sufficiently early to run up to 90° or 95°. This will insure the berries swelling well, and with a free circulation of air a good finish may be secured. Where the Grapes are stoning a regular temperature of about 65° at night and 5° to 10° more by day will be sufficient, with a further advance of 10° to 15° from sun heat, admitting air early so as to dissipate the moisture before the sun shines powerfully upon the house. Although a moderate lateral extension be essential overcrowding must be avoided, retaining no more foliage than can have full exposure to light. Feed with liquid manure or surface dressings more of a substantial than a stimulating nature, and mulch lightly, especially in light soils, to conserve the moisture and encourage surface roots. With the Grapes just thinned every encouragement should be given to the swelling by early closing and maintaining a moist and high atmosphere. Allow the laterals to extend as far as space admits without crowding, and supply water or liquid manure at the roots liberally, but avoid excessive vigour by applying phosphatic elements as superphosphate.

**Late Houses.**—Except in the latest houses the Grapes will now have been thinned, and where not it should be attended to as soon as the fertilised berries can be seen by their taking the lead in swelling. Syringing may be practised once to cleanse the bunches of the remains of the flowers, otherwise the syringe should not be used over the foliage after the Grapes are set, as most water, even soft and clear rain, leave a stain which becomes conspicuous when the Grapes are ripe. Late Grapes should be thinned more severely than midseason varieties in order to admit air freely into the interior of the bunches, and make it easier to remove decayed berries. Permit the laterals to extend until the available space is fairly covered with foliage, but avoid overcrowding, especially of the principal leaves. Very close pinching may be practised where the crop is proportionate to the foliage, erring, if at all, on the side of a light rather than a heavy crop in such circumstances. Damp

the available surfaces in the house in the morning and afternoon, and an occasional sprinkling with liquid manure will do much to invigorate the Vines and keep red spider in check. Surface-dress inside borders with sweetened horse droppings, little and often, as too much ammonia will injure the foliage.

Give inside borders a thorough soaking of tepid water or liquid manure as may be considered necessary on account of the crops and vigour of the Vines. Outside borders also will require copious supplies of water where the rainfall is inadequate to moisten them through to the drainage, and they may be lightly mulched with short manure. Ventilate early, or between 70° and 75°, and increase with the advancing sun heat; and allow a good rise from that source, closing at 80° to 85°, and rising to 90° or 95°. Leave a little ventilation at the top of the house at night to prevent excessive condensation.

#### THE KITCHEN GARDEN.

**Asparagus.**—Seeing that cutting commenced nearly a month earlier than usual it ought to cease that much sooner, or the plants will become so much exhausted that next season's growth will not be at all satisfactory. Strong crowns or buds are never formed at the base of weakly growths, and unless the rainfall is well up to the average during June Asparagus growths in many cases will be very feeble indeed. In all warm localities Peas should now be plentiful, and that admits of Asparagus being withheld from the dining-table; but in very backward localities there is less need for discontinuing cutting the latter for a few days longer. It is now when a mulching of strawy manure would be of the greatest service to the beds generally, and to those newly planted in particular, always supposing a close look out is kept for slugs. It is in showery weather when the slugs are most to be feared, and if let alone they eat all the bark from the young shoots and even those fairly old. Hand-picking early in the morning is the surest remedy, though occasional dustings of soot and lime will check them considerably. A liberal surfacing of salt in showery weather is most beneficial to Asparagus, and is also destructive of slugs and weeds. It is only at this time of year that it should be applied to clayey soils. Rough winds are very detrimental to Asparagus, and the extra strong tall growths should be supported by means of stakes of some kind.

**Runner Beans.**—Where the soil was properly moistened for the seed the plants have come up quickly, evenly, and strongly, and in many instances ought to be thinned-out rather freely. If there are any blanks to be made good or another row is needed make use of the thinnings for this purpose. Prior to moving them with a trowel give both the rows of plants and the sites to be planted a good soaking of water. When Runner Beans are left as thickly as they come up, or say not more than 3 inches apart, they eventually smother and greatly weaken each other, whereas if early thinned to such distances as will leave one or, at the most, two plants to each stake or pole, that will give much better results. Crowded rows are the first to feel the ill effects of drought, and the first to fail later in the season. Stakes or poles from 20 feet down to 4 feet in length may be placed to these Beans, as they will climb to a great height if liberally treated at the roots. The double rows should, if possible, have two lines of fairly long stakes, these being set out about 15 inches wide at the bottom, and crossing each other a similar distance from the top, and being duly laced together by means of other stakes running along the point of crossing, no winds will greatly disturb them. If stakes from 6 feet to 9 feet in length are used in single lines these also should be braced together near the top, or when heavily laden with haulm and beans strong winds will upset them. Never neglect this staking till the running growths are in a confused mass, as it will be next to impossible to properly uncoil these without damaging them. Those not to be staked must have the running growths kept closely snipped out, the strong flower spikes being then freely pushed out from the few joints about and above the seed leaves. In dry weather give occasional soakings of water and a mulching of strawy manure.

**Kidney Beans.**—These also ought to be freely thinned out, leaving the plants of early or only moderately strong growers about 8 inches asunder, and Canadian Wonder 12 inches apart in the rows. If extra fine straight pods are desired at any time keep the plants staked upright, freely thin out the young pods, water in dry weather, and mulch. These are not much in demand after once Runner Beans are plentiful; but where they are preferred successional sowings should be made every fortnight or three weeks, discontinuing about the first week in August. They succeed admirably through the centres of the spaces between Celery trenches, and are not greatly injured by having the soil narrowed up to the roots accordingly, as it is wanted for surrounding the Celery.

**Cauliflowers.**—The earliest Cauliflowers did not, as a rule, follow immediately the latest Broccoli, but were not very far behind. Caterpillars are very injurious to these crops, and ought to be kept down by hand-picking, or they will quickly spoil many of the hearts. In order to keep the latter thoroughly well blanched the upper leaves should either be tied together, or else some of the lower ones may be broken off and tucked over the heart. It is now when liquid manure, freely applied, will do the most good, this causing the hearts to attain their full size. Driblets are quite wasted on Cauliflowers, and they ought always to have a thorough soaking, once a week being often enough in most cases, especially if solid manure was freely dug into the ground. Every opportunity should be taken of getting out the varieties Eclipse and Autumn Giant, these affording a long succession of extra solid hearts next autumn. On good ground 30 inches apart each way is not too



much space to allow these, but if planted on firm ground manured for preceding crops only 2 feet is enough.

**Celery.**—If wanted extra early the plants ought, ere this, to have been put out; but for ordinary purposes, and to meet the requirements of most places, the early part of June is soon enough to put out the earliest raised plants. In any case they ought to have been pricked out and grown into sturdy plants before being transferred to the beds or trenches, and any delay in transplanting after they touch each other should be avoided. Exhibition Celery is most surely had by planting on the level or even slightly raised beds, the site being well in the open and prepared by a liberal admixture of loam, ashes from a garden smother, and solid manure. They may be planted from 15 inches to 18 asunder each way, and being kept well supplied with water and liquid manure. Celery thus treated grows more rapidly and strongly than it does as a rule in trenches. The blanching can be effected by means of brown paper bandages. For ordinary purposes trenches 18 inches wide with 4 feet spaces between answer well, though trenches another 6 inches wider are frequently made to hold a double row of plants, solid manure being freely forked in in each case. Give the plants a good soaking of water before they are moved, lift with a ball of soil about the roots, and replant 8 inches apart in a single row, or a foot asunder in double rows. After planting give a watering, and keep them constantly moist during the rest of the summer. Sprinkling the foliage in the evenings of bright days is beneficial, and if these few details are observed sturdy plants will not flag in quite the hottest weather.

#### PLANT HOUSES.

**Lilium Harrisii.**—Plants that have flowered may be stood outside and cut down within a foot of their base, when they will start again into growth and produce flowers in the autumn. Later plants must be kept perfectly cool and free from aphides by fumigating or dusting them with tobacco powder. The latest of all will do well in cold frames, where the lights can be thrown off daily in order to keep them back as much as possible in addition to keeping them dwarf.

**Epacris.**—Those that have started well into growth should now have air admitted to them liberally by day, and a little may be left on during the night. If the pots are standing on ashes or other moisture-holding material, shading should be dispensed with. These plants need abundance of light to ripen and harden the wood as it is made. This is essential if they are to bloom profusely another season.

**Erica hyemalis.**—These should be in frames and abundance of air should be given them. If possible raise the frames slightly at the base, so that a good circulation of air can penetrate freely to the lower portion of the plants. Rapid growth can be produced by close confined treatment, but this is unwise if the plants are to flower freely. Sturdy, well-ripened growth is the secret of success. Close confined treatment soon ruins such kinds as *E. autumnalis* and *E. caffra*. The decaying flowers should be removed from the varieties of *E. ventricosa* as they go out of bloom. The base on which all hard-wooded Heaths stand should be kept moist, and too much air cannot well be given them.

**Cytisus.**—Plants that have commenced growth after being cut back may be potted if they need more root room. These plants do well in good loam, sand, and one-seventh of decayed manure. After potting place the plants in a cold frame and give them plenty of air. Any shoots that take the lead should be pinched, so that the plants will form close compact bushes. Nothing is gained by inducing these plants to make rapid soft growth by keeping them close. Acacias of various kinds that flowered early and have started into growth may also be potted and given the same treatment.

**Solanums.**—Be careful that plants which are placed in the pots in which they are to be used for decoration are not allowed to become dry at their roots, or else they will fail to set berries. Plunge the pots if practicable, and give air liberally. Soot water, after they are rooting freely, is also beneficial. If large plants are needed they may be planted out in frames; but a firm base should be provided, so that the plants can be lifted with good balls of soil at potting time.

**Salvias and Eupatoriums.**—Young plants must be pinched from time to time as they need it to induce them to branch freely. These plants may be gradually hardened to cool-frame treatment, ready for eventually planting outside, or they may be grown in pots and stood out when thoroughly hardened. If the latter do not allow them to become root-bound before they receive their final shift.

**Heliotropes.**—Cuttings that are rooted for autumn and winter flowering may be placed into 3-inch pots, and grown in gentle warmth until they are established, when they may be hardened to cool frame treatment, and finally placed into pots 2 inches larger and stood outside. The only attention needed is to pinch the shoots to induce them to branch.

**Zonal Pelargoniums.**—Place all that are ready into their flowering pots, and gradually harden them in cold frames ready for standing outside whenever the weather is sufficiently favourable. All flowers that show should be removed, as well as the points of the shoots, to induce the plants to branch. The soil should be pressed firmly into the pots, good loam being used, with the addition of sand and one-seventh of manure. Ivy-leaved kinds may be given the same treatment, and will then flower profusely during the autumn and winter if well ripened. Plants that are only just rooted may have their points removed and grown for a time under glass before placing them outside, in fact they should be kept under glass until they are ready for the pots in which they are to flower.

## THE BEE-KEEPER.

### APIARIAN NOTES.

JUST when swarming was beginning to be general about the middle of May the weather changed unfavourably, and continued so till the end of the month. Hives that were prepared to swarm did so with the improved weather on June 1st, having in most cases many queens. The queens of one hive mixed with others, and some entered stock hives, unsettling many swarms. The stocks in every instance killed the invading queens, but swarms swarmed again. As the only remedy to prevent them I inserted a strip of zinc queen excluder in the entrance. This, in some cases, kept the queens inside, but the bees flew out, and although the stock hives were removed 30 yards or more away, the bees found them, and to prevent them entering I had to take them within doors until they settled.

#### UNSETTLED SWARMS.

Strange bees, or several queens, give much trouble. They task the bee-keeper more than all other manipulations put together, and annoy and bewilder the beginner completely. It is not easy to advise what to do under the circumstances. Bees are so capricious, and the best thing the bee-keeper can do is to study their many ways of acting, then be prepared to take advantage of it. It would be an easy matter to advise catching the surplus queen, but then there are sometimes from a dozen to a score in one swarm. If we could rely upon the first swarm coming when it is just prepared to do so, before there is a single young queen hatched, the task is easy to depose all the surplus queen cells about a week after the issue of the first swarm. It is no remedy to attempt artificial swarming with a low temperature and amidst rain, because it cannot be performed successfully.

Another difficulty is having several drone-laying bees in a hive. In such cases any attempt of the apiarist to cause the bees to raise queens will be resented by them, or if they do so the queens will be undersized, while it is even more difficult to get the bees in a proper mood to accept a queen. When there are no egg-laying bees present there is no difficulty whatever to introduce an alien queen to any queenless stock, no matter whether the bees be young or old.

#### FEEDING.

During the past fortnight I have been feeding swarms as I recently advised, but sparingly. We usually have to feed till June 20th, but it is probable that we shall finish before that date this year. I would ask inexperienced bee-keepers to think well over the matter before spending money on cumbrous hives. Although I was the first to explain our well tried system it was not enough to warrant me to advise all to rush headlong into the method without experience. Some persons have argued that moderately strong hives gathered more honey than extra strong ones. Only last year one of these writers told us that swarms gathered no honey, or rather if colonies were allowed to swarm there would be an end to honey gathering. I have one hive that has swarmed four times; all are hived and doing well. If it turns out a good season I will let your readers know the result of the hives gathering, and of their increase should any of them swarm again.

#### FOUNDATION.

Although I have manufactured comb foundation for thirty-one years, and at one time advised its use extensively, since I proved the fallacy of 20 lbs. of honey to the 1 lb. of wax theory with the great reduction in the price of sugar, I have modified my views somewhat. Sugar is much cheaper and more satisfactory to use for comb building than much of the comb-foundation in the market. Of course when a laying queen is with the swarm I do not allow time and eggs to be lost, but give all such a proper supply.—A LANARKSHIRE BEE-KEEPER.

### TRADE CATALOGUES RECEIVED.

H. & E. Albert, 17, Gracechurch Street, London, E.C.—*Application of Artificial Manures.*

F. C. Calvert & Co., Manchester.—*Carbolic Softsoap and Disinfectants.*

Michael Cuthbertson, Public Park Nursery, Rothsay.—*Florists' Flowers and Seeds, and Competitors' Guide.*

Dammann & Co., Naples, Italy.—*Bulbs, Roots, and Orchids.*



## TO CORRESPONDENTS

\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Book** (R. A. P., York).—We cannot name any particular work as superior to all others. You can best obtain full information by consulting botanical works in a good library, public or private, to which you no doubt have access.

**Pear Tree Shoots** (J. Hiam).—Mr. Abbey says there is no trace of mite infection nor the presence of any insects or larvæ on the specimens he has examined. Two of the young shoots, however, have been pierced by some insect about an inch from the base, down to the inner bark, which is more or less discoloured, impeding the flow of the sap, and producing a corticated condition of the bark.

**Wood Ashes** (E. H. Cottingham).—We should not hesitate to use the wood ashes or charcoal, the residue of unfortunate conflagrations, in either vegetable quarters or flower borders, even though much salt water was used in subduing the fires; but we should wash the refuse before mixing with soil for plants in pots. Its safety, however, may easily be tested by inserting a few Zonal Pelargonium cuttings in some of it sifted for that purpose; also by planting a few Cabbage or other plants in a mixture, say, of half wood ashes and half soil.

**Strong Fumigation** (J. E.).—We should not like to risk a "double strength" volume of smoke in a house containing Melons. You can easily ascertain whether mealy bug can be destroyed as you have been advised, by inserting the stems of infested sprays of Gardenias and Stephanotis in water, and placing them under a handlight or in a box, then treating them to a "double strength" dose of smoke. This is what we should do before incurring risk by a strong general fumigation. The effect on Melons could be ascertained in the same way. Mealy bug is kept in subjection by hundreds of good gardeners by insecticides in solution and syringing with clear water.

**Tomatoes in Greenhouse** (Reader).—Endeavour to produce strong, firm, sturdy growths by judicious ventilation and watering, in a light position. If, as ought to be the case, flower trusses are freely produced from the main stems, all other growths may be nipped off as they appear, except the main leaves. The plants may extend as high as there is room for them. When in flower shake the trusses or draw the hand lightly over them at midday for dispersing the pollen for fertilisation. If sufficient flower trusses do not form on the main stems lateral growths may extend where there is room for them, taking off their points above the trusses, but avoid overcrowding. With good plants, well managed, we prefer the single stem method of culture.

**"Malmaison" Carnations Dying** (C. P.).—A fungus (Helminthosporium) often attacks Carnations virulently, and many plants succumb to the attacks of a maggot. As the examples you sent did not satisfy us that the plants had fallen a prey to either fungus or maggots they were submitted to Mr. Worthington G. Smith, who says the plants have succumbed to a virulent attack of Nematodes, minute worms which eat their way inside the leaves, increasing as they go till they devour the plants. We will ask Mr. Smith to say something more about the eelworm pest which attacks Carnations, and in the meantime you had better burn those which the enemy has spoiled, soil and all, for they cannot possibly be restored to health again.

**Melon Plants for Cold Pits** (G. G.).—For a pit 6 feet by 4 feet one plant in the centre of each would be sufficient, but as the season is somewhat advanced it would be desirable to place two plants in each pit, say 3 feet apart, making the soil very firm so as to secure a sturdy fruitful habit. After the plants have been stopped once, this being done at the second rough leaf, and the shoots resulting being reduced to four on each plant by rubbing off others while quite young, stop them 9 inches from the sides of the pit, they being distributed evenly over the surface, and from these side shoots will spring, which will show blossoms at the second or third joint. The fruit blossoms have a swelling immediately below the flower the size of peas or horse beans, but staminate or pollen-bearing flowers have not any conspicuous appendage below. The difference is readily apparent, but these flowers must not be removed until the fruits are set and swelling. It is a good plan, however, to pluck one of them, remove its corolla, and apply the pollen to the

fruit-producing flower when fully expanded. This may be practised on all the flowers with benefit, stopping the shoots one joint beyond the fruit at the same time.

**Leaf-cutter Bee** (W. G. Drovers).—The bee in your Rose house which cuts away portions of the leaves and deposits them in a crevice in the sill, returning for more, is the leaf-cutter bee (*Apis* or *Megachile centuncularis*), *h*. You will perceive that the leaves you have sent are well represented in the accompanying engraving (fig. 84). The process which one of these bees employs in cutting the pieces of leaf that compose her nest is worthy of attention. Nothing can be more expeditious. With her strong mandibles she cuts without intermission in a curved line so as to detach a triangular portion. When this hangs by the last fibre, lest its weight should carry her to the ground, she balances her little wings for flight, and the moment it parts from the leaf flies off with it in triumph, the detached portion remaining bent between her legs in a direction perpendicular to her body. The body of the insect is about half an inch long. The female, which is the leaf-cutter, is black, covered with ashy coloured hairs; jaws or mandibles large, terminating in four teeth; antennæ black, rather longer than the head; wings slightly transparent, dark tipped, veins black; legs hairy, spurs dull red, pollen brushes of hind legs golden; abdomen heart-shaped. The male's body thickly covered with yellow hair; antennæ longer than head; jaws two-toothed; dense yellow beard between the antennæ; fore thighs dirty yellow at the outward tip; abdomen rather oval,



FIG. 84.—LEAF-CUTTER BEE.

extremity inflexed, obsoletely toothed. In the figure, *d* represents the larva, with its head and the anterior segments of the body protruded out of the case (*b*), the wider part of which is formed of portions of the leaf upon which the larva is feeding, and which it has not yet actually detached from the leaf: *c* indicates the narrower part of the case formed of portions of other leaves, *a* showing the opposite leaflet almost entirely stripped to its midrib, one portion having been consumed and another portion employed in the construction of the narrower part of the case. The proceedings of this larva in the manufacture of its case are full of interest; it will be observed, for instance, that the instinct of the insect teaches it to arrange the narrow strips of the Rose leaf, of which the case is formed, in a spiral direction, that being the only method in which greater length can be given to the case, in order to keep pace with the increased size of the insect; the spire is kept in its position by means of silken threads, which the larva weaves from its mouth, and by which it attaches the mouth of the case to the leaf when it has finally detached the strip. As the soft skin of the larva requires a covering for a defence, so the insect, on the slightest alarm, withdraws into the mouth of the case, otherwise when it desires to feed it protrudes the front of the body for about a quarter of an inch out of the mouth of the case, and then gnaws the Rose leaf at its ease, the pair of legs at the end of its body enabling it to keep firm footing within. The leaf marked *f* in the drawing shows the mining of the larvæ of the moths.

**Campanulate Foxglove** (F. G.).—The terminal campanulate flowers are abnormal, and may be regarded as monstrosities—one of them attractive, the other the reverse. Abnormal floral forms in the



Foxglove and other plants with irregular monopetalous corollas, as in *Linaria vulgaris* var. *Peloria*, are not uncommon. In the Foxglove you have sent, the corolla has become greatly enlarged and split into spreading segments, attractively spotted. A very handsome flower of the same character was illustrated in the *Journal of Horticulture* of August 6th, 1891, page 121. We have seen numbers of such flowers periodically during the last thirty years, but varying somewhat in size, form, and marking. They are floral curiosities, and some of them of a distinctly pleasing character. The precise cause of such changes has not been revealed.

**Thrips on Vines** (*R. M. R.*).—No greater mistake can be made than to allow these insects to increase till Vines are seriously infested before resorting to repressive measures in earnest. Early attacks are visible enough to watchful eyes, and if the first few leaves affected are sponged with a solution of softsoap and tobacco water a horde of insects may be prevented. Fumigation will destroy thrips and not injure Vines or Grapes if tobacco or the best tobacco paper be used. Campbell's rolls, McDougall's sheets, and Lethorion cones have all been found satisfactory. The smoke must be cool, two or three moderate fumigations on consecutive nights being safer than one dense volume of smoke. The fumigations must be repeated in a week. If the insects reach the berries and footstalks the crop of Grapes will be spoiled. As you only allude to one house we should make a determined effort to sponge every leaf, stem, and stalk. We have known a couple of men set to work at 6 P.M., continue till dark, commence again at 4 A.M., and thus banish the pest and save a house of Grapes from ruin. The men were in earnest, and succeeded in their object as earnest men are apt to do. We have known not only crops of Grapes spoiled but Vines ruined by invasions of thrips that drained them of their juices—evils which might have been prevented by quick perception, prompt action, and stern resolution to conquer the invader.

**Weevils on Pear Shoots and Nut Leaves** (*J. Hiam*).—The green weevils are *Rhynchites betuleti*, which are very abundant this year on Hazel, but they prefer Hornbeam, and among garden trees Pears and Vines. The females form conical habitations for the larvæ out of one or more leaves rolled together, and caused to wither by their stalks being partly gnawed through; the larvæ are full fed by the time the part has fallen off, when they crawl into the earth and become pupæ, and finally the weevils emerge, generally in the following spring. The best remedy is to capture the weevils by shaking the trees over cloths, promptly collecting the weevils and placing them in a pail smeared inside with gas tar, or containing a mixture of softsoap and petroleum, giving a smart "whip" with a birch switch. The curled up withered leaves should be removed and burned. Syringing or spraying the trees with a petroleum and softsoap mixture, say  $\frac{1}{4}$  lb. softsoap dissolved in a gallon of boiling water, adding a wineglassful of petroleum, and churning with a force pump five minutes; or place in a 2 gallon stone bottle, move up and down or to and fro a similar time, then add 3 gallons of hot water and mix thoroughly, using as a spray or through a fine rose syringe when cool enough (90° to 100°). Spraying with Paris green is also effectual, but it must be used weak over trees with hairy leaves, such as Nuts. Pears will stand a mixture of 1 oz. to 20 gallons of water.

**Gloxinias Failing** (*J. H. Y.*).—A great deal depends on the provision afforded for growing these plants, and on this point you give no indication. The plant you send has had its growth arrested, and the variety is inferior. There may, as you suggest, have been some error in watering, or the position may not have been suitable. We doubt if this particular plant had been overwatered. If it was transferred from a small pot to a larger there is the possibility of the soil having been rather too dry at the time of shifting, but we cannot be certain about this; in fact, in the absence of any information about the treatment accorded it is as difficult to indicate the precise cause of an evil in plants, as it is for a doctor to determine the seat of disease without knowing anything about his patient. Gloxinias do not thrive on a dry open stage, but require a humid atmosphere till in flower. They like a close damp base and a genial temperature of 60° to 75° when growing, but corms will start into growth in a temperature of 55°. They object to full exposure to hot sun, and frequent syringings are not good for them. They will not make free progress if either too wet or too dry when shifted, nor if insufficiently or excessively watered afterwards. All the plants do not require water at the same time. When the soil is at all pasty to the touch it is wet enough; only when it is sufficiently dry to crumble should water be given, and then it ought to be supplied copiously. Light surface sprinklings are delusive and dangerous, for if the soil is dry towards the bottom of the pots and wet on the top the plants must fail. They should be examined for watering twice a day. The soil must be suitable. We have known serious plant failures this year through too much chemical manure having been mixed with the compost. In a suitable house few plants are more easy to grow than Gloxinias, and not many are more beautiful when the varieties are good and as well grown as Sir William Pink's, described on page 455. You will there find a suitable soil mixture. Mr. Hunt attributes much of his success to the non-removal of the old soil from the corms; but some persons have not succeeded so well as he has when trying that plan, and he would not fail if he abandoned it, though he would be foolish to do so. It is only wise to change methods that do not prove satisfactory, and some persons attain their object in one way, some in another. Another point worth mentioning is this—plants from some strains of Gloxinias are "miffy," and can only be made to grow freely by experts who have the best means at command, while plants from a different strain grow like Cabbages if a fair chance is afforded them.

Again, we have to remember that a fungoid disease attacks many plants, but those of a robust character, through inherent vigour and good culture, are the least likely to be affected. You would perhaps do well to raise a fresh stock from seed if you have the requisite convenience, or purchase good corms in the spring; they are inexpensive.

**Anisanthus splendens** (*C. F.*).—This is a greenhouse Iridaceous plant from the Cape of Good Hope, and is usually increased by offsets. Sow the seeds in pots, pans, or boxes of soil composed of sand, loam, and peat in equal parts, to be watered well before sowing, and the seed covered its own thickness with fine soil, and then with squares of glass. A shaded position in a frame would be suitable, as the soil would not dry so rapidly as in a sunny house, and it must be kept constantly moist. When the seedlings appear remove the glass and assign them a position where they can have sun and air. When large enough they can be transplanted in other boxes, and eventually be placed singly in pots. A frame is a suitable place for growing them in summer, and they can be wintered in a greenhouse.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*F. H. K.*).—Cape Spurge, *Euphorbia Lathyris*. (*E. S.*).—*Lælia purpurata*. (*T. F.*).—Orchid, *Brassia verrucosa*, poor form; yellow flower, *Acacia cultriformis*; basket plant, *Saxifraga sarmentosa*; Fern, *Asplenium lucidum*. (*A. R.*).—1 and 2, Forms of *Saxifraga MacNabiana*; 3, *S. melliana*; 4, *S. hypnoides* var.; 5, Specimen insufficient; 6, *S. cuneifolia*. (*J. L.*).—*Eriophorum polystachyum* (Cotton Grass). (*J. W. L.*).—*Bignonia lactiflora*. (*W. H.*).—We do not know a plant "commonly called Rose Noble." Possibly some of our readers may be able to give you its botanical name.

# COVENT GARDEN MARKET.—JUNE 7TH.

HEAVY supplies of all kinds reaching us, and readily cleared at slightly reduced rates.

## FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, half sieve .. ..	0	0	0	0	Lemons, case .. ..	10	0	to 15	0
" Tasmanian, per case	6	0	12	0	Oranges, per 10j .. ..	4	0	9	0
" Nova Scotia, per					Peaches, per doz. .. ..	3	0	12	0
barrel .. ..	12	0	17	0	St. Michael Pines, each	2	0	5	0
Grapes per lb. .. ..	1	6	2	6	Strawberries, per lb. ..	0	6	1	0

## VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle ..	1	6	4	0	Mustard and Cress, punnet	0	2	to 0	0
Beans, Kidney, per lb. ..	0	6	1	0	Onions, bunch .. ..	0	3	0	5
Beet, Red, dozen .. ..	1	0	0	0	Parsley, dozen bunches ..	2	0	3	0
Carrots, bunch .. ..	0	4	0	0	Parsnips, dozen .. ..	1	0	0	0
Cauliflowers, dozen .. ..	2	0	3	0	Potatoes, per cwt. .. ..	2	0	5	0
Celery, bundle .. ..	1	0	1	3	" new .. ..	5	0	1	0
Coleworts, dozen bunches	2	0	4	0	Salsafy, bundle .. ..	1	0	1	6
Cucumbers, dozen .. ..	1	6	3	0	Scorzonera, bundle .. ..	1	6	0	0
Endive, dozen .. ..	1	3	1	6	Seakale, per basket .. ..	0	0	0	0
Herbs, bunch .. ..	0	3	0	0	Shallots, per lb. .. ..	0	3	0	0
Leeks, bunch .. ..	0	2	0	0	Spinach, bushel .. ..	3	0	3	6
Lettuce, dozen .. ..	0	9	1	0	Tomatoes, per lb. .. ..	0	4	0	6
Mushrooms, punnet .. ..	0	9	1	0	Turnips, bunch .. ..	0	0	0	0

# AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

## Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	to 3	0	Mignonette, 12 bunches ..	3	0	to 6	0
Bouvardias, bunch .. ..	0	6	1	0	Myosotis, dozen bunches ..	1	6	3	0
Calceolaria, dozen bunches	4	0	6	0	Narciss, var., French, dozen				
Carnations, 12 blooms ..	1	0	3	0	bunches .. ..	1	0	4	0
Carnations, dozen bunches	3	0	6	0	Orchids, per dozen blooms	3	0	12	6
Cornflower, dozen bunches	2	0	3	0	Pelargoniums, 12 bunches	6	0	9	0
Eucharis, dozen .. ..	3	0	4	0	Pelargoniums, scarlet, doz.				
Gardenias, per dozen ..	1	0	3	0	bunches .. ..	3	0	6	0
Iris, various, doz. bunches	6	0	12	0	Pinks, dozen bunches ....	1	6	4	0
Lilac, white, French, per					Primula (double) 12 spray	0	9	1	0
bunch .. ..	3	0	5	0	Pyrethrum, dozen bunches	2	0	6	0
Lilium candidum, dozen					Roses (French), per doz. ..	0	6	2	0
blooms .. ..	0	6	1	0	" (indoor), dozen .. ..	0	6	1	6
Lilium longiflorum 12					" Red, doz. bunches ..	4	0	8	0
blooms .. ..	2	0	3	0	" Tea, white, dozen .. ..	1	0	2	0
Lily of Valley, doz. bunches	3	0	6	0	" Yellow, dozen .. ..	2	0	4	0
Maidenhair Fern, dozen					Spiraea, dozen bunches ..	3	0	6	0
bunches .. ..	4	0	6	0	Sweet Sultan, doz. bunches	4	0	6	0
Marguerites, 12 bunches ..	2	0	4	0	Tuteroes, 12 bloom- .. ..	0	6	1	0

## PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to 12	0	Lilium Harr'ssi, per dozen	12	0	to 24	0
Arum Lilies, per dozen ..	8	0	12	0	Lobelia, per doz. .. ..	4	0	6	0
Aspidistra, per dozen ..	18	0	36	0	Lycopodiums, per dozen ..	3	0	4	0
Aspidistra, specimen plant	5	0	10	6	Marguerite Daisy, dozen ..	6	0	12	0
Calceolaria, per dozen ..	5	0	8	0	Mignonette, per doz. ....	4	0	8	0
Dracena terminalis, dozen	18	0	42	0	Musk, per dozen .. ..	3	0	4	0
" viridis, dozen .. ..	9	0	24	0	Myrtles, dozen .. ..	6	0	9	0
Ericas, various .. ..	12	0	24	0	Nasturtiums, per dozen ..	4	0	6	0
Euonymus, var., dozen ..	6	0	18	0	Palms, in var., each .. ..	1	0	15	0
Evergreens, in var., dozen	6	0	24	0	" (specimens) .. ..	21	0	63	0
Ferns, in variety, dozen ..	4	0	18	0	Pelargoniums, per dozen ..	8	0	15	0
Ferns (small) per hundred	5	0	8	0	" scarlet, per dozen ..	4	0	6	0
Ficus elastica, each .. ..	1	6	7	6	Petunia, per dozen .. ..	6	0	9	0
Foliage plants, var., each	2	0	10	0	" single, in boxes .. ..	1	6	3	0
Fuchsia, per dozen .. ..	6	0	12	0	Saxifrage .. ..	12	0	18	0
Genista, per dozen .. ..	6	0	12	0	Spiraea, per dozen .. ..	6	0	12	0
Ivy Geraniums .. ..	4	0	8	0					

## Bedding plants in variety.





## A SPRING DROUGHT.

CONFLICTING reports as to the influence of the long spring drought are so numerous, that it is worth while inquiring if it has done material harm or good, and why its influence has been beneficial or otherwise, in order that its lessons may be turned to account in the improvement in practice which is the aim and effort of every sensible farmer. Our opportunities for observation in southern and midland counties have brought conviction that as usual it is in badly cultivated land that the crops have suffered from drought, and it is the men of luck and chance, taking whatever the seasons may bring them, without an effort at improvement, who complain, and who undoubtedly suffer. Of this there can be no doubt: it is on heavy wet land that corn is coming into ear on very short straw; it is also on poor pasture that the hay crop is a failure. Everywhere in the corn-growing district it is evident that on rich well-cultivated land the Wheat looks well enough. Wheat land for Wheat, and that of the best, is the lesson plainly taught; it is enforced by the thin yellow growth, with small ears, of the Wheat on light poor soil.

In some districts the drought appears to have proved a positive blessing; as, for example, in the arable districts of north-eastern England it is regarded as having been a spring of almost unmixed advantage. In Scotland, according to the "North British Agriculturist," "Scottish farmers are all agreed in declaring that never, in the recollection of the present generation, has a better or more favourable spring been experienced." A full average crop of hay, it is added, is now expected, food for stock is very abundant, and a large breadth of Turnips has been sown under the most favourable conditions. Turning to the north-west of England, farmers are now certain of an average crop of seeds and hay; with another fortnight of warm showery weather such crops will be much above the average. There, as in Derbyshire, the pasture has never lost colour; in Derbyshire growth has in some parts been so short that stock have been turned into some of the grass reserved for mowing; but in Lancashire it has never gone off, and "seeds" have been in cut a month earlier than usual. In Surrey we have in some parts seen excellent crops, while in others it is thought there can be no hay, and there are complaints of corn coming prematurely into ear. It is very much the same in Kent, where some of the small farmers, already behindhand with the rent, and without means to bring the soil at all up to a fair standard of fertility, are now struggling for bare subsistence, with no prospect of a hay crop, and a certainty of inferior corn crops. Those of them having fruit or Hops may do well, but for those entirely dependent upon ordinary farm crops the difficulties may well appear insuperable.

To such men the lesson of the drought assuredly is, Cease to follow the practice of the large farmers; cultivate only enough land for corn for home use; have a fair proportion of Hops, fruit, and such sorts of vegetables as are calculated to afford some profit. Do not forget that of fruit Strawberries come into bearing a year after planting, bush fruits the second year, increasing in produce for several years subsequently; Apples of such sorts as Stirling Castle, Lord Grosvenor, Duchess of Oldenburg, and Keswick Codlin almost as soon, and that a mixed plantation of the best fruit is one of the most profitable crops on a small farm under really good management. Poultry, milk, butter, cheese, are also produce worthy of the small farmers' special attention; there is money in all of them. If the profits

are small the returns are quick, and capital may be turned over many times in the year, the amount of profit resting very much upon management and skill. For example, the man whose cows have now a full feed of grass finds the milk yield improve both in quantity and quality, while he who has to eke out the grass with hay and oil cake complains of a serious falling off in milk yield and in butter. Nor is the butter really good, cake has been used so generally for dairy cows this spring that the butter has been decidedly inferior. Even now it ranges in price from 8d. or 10d. up to twice that amount per pound. Plenty of butter at the lower prices is to be had at Newark Market every week—not this season only, but every season. Surely South Lincolnshire farmers could do better than this. The common fault appears to be bad management in dairy and cowhouse, the result being an inferior article. Would not the makers of such butter be surprised to hear that much of it is passed through the butter worker, well washed, made up in more tempting form, and re-sold at a profit? Yet such is the case.

## WORK ON THE HOME FARM.

Seed germination in some fields of spring corn has been so irregular that much of it did not show plant till the drought broke. This points to a little difference in the time of ripening, which must not be forgotten as harvest approaches. There has also been a second drilling of Turnips in fields where the soil dried quickly into a hard crust after the first sowing. With frequent showers, and soil so warm, second sowings were entirely worth while, and with plenty of manure in the soil the young plant is certain to grow quickly out of harm's way. According to the results of sixty-one experiments, carried out by the Highland Society last year in different parts of Scotland with manure for Swedes, the greatest yield of 17 tons 9 cwt. of roots was obtained at a cost of 26s. per acre for 4½ cwt. of basic slag, 3 cwt. superphosphate, and 1 cwt. nitrate of soda. It is also noteworthy that in these trials a mixture of slag and superphosphate has proved superior to either of these phosphatic manures alone; and that the same mixture of phosphates without any nitrate, costing only 17s. per acre, gave an average yield of 16 tons 1 cwt., or only 1 ton 8 cwt. less than where the nitrate was added at an additional cost of 9s.

Transplant Emperor Cabbage now to come into use in October, just when the herbage of pasture is becoming thin and innutritious, and to follow it transplant any of the larger sorts of Drumhead Cabbage. No crop repays us better for generous treatment than this, our aim being to obtain large firm hearts as being decidedly more nutritious than the outer leaves. Thousand-headed Kale intended for use in the autumn should also be transplanted soon, and for a winter and spring supply follow with other crops transplanted in July. Particular attention is advisable to these and other green crops calculated to afford a supply of cattle food for next autumn and winter.

TRADE EXHIBITS AT AGRICULTURAL SHOWS.—Messrs. Edward Webb & Sons, Wordsley, desire us to state that they had a large and diversified exhibit of their specialties at the Bath and West of England Show at Gloucester; and Messrs. James Carter & Co., High Holborn, wish us to announce that they have a fine display of pasture Grasses and Clovers at the Royal Agricultural Society's Show at Chester.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.				Rain.
1893.  May and June.		Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wct.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	28	30.223	63.5	55.2	N.	58.0	72.6	46.7	119.3	42.4	—
Monday ..	29	30.077	65.6	58.4	N.E.	58.7	76.4	51.3	127.9	45.2	0.251
Tuesday ..	30	30.105	50.9	47.6	N.E.	58.8	59.0	47.4	93.9	50.0	—
Wednesday ..	31	30.048	51.8	45.9	N.	56.3	63.1	38.2	107.1	34.0	—
Thursday ..	1	30.037	56.9	49.0	N.	55.9	66.8	38.3	103.6	35.0	—
Friday ..	2	29.950	57.2	51.8	S.E.	56.7	68.0	48.9	107.3	44.1	—
Saturday ..	3	29.944	58.2	52.1	E.	57.4	71.3	39.9	113.8	36.1	—
		30.055	57.7	51.4		57.4	68.2	44.4	110.4	41.0	0.251

## REMARKS.

23th.—Generally sunny till about 1 P.M., overcast and threatening after.  
 29th.—Brilliant early, and generally sunny in the morning; overcast afternoon with spots of rain at 3 P.M., and rain with thunder from 4 to 5 P.M., and showers later.  
 30th.—Rain from 1 to 5 A.M.; overcast all day; gleams of sun at sunset.  
 31st.—Overcast early, but generally sunny after 10 A.M.  
 1st.—Bright early; dull day, with occasional sun.  
 2nd.—Generally cloudy in morning; occasional sunshine in afternoon; fine evening.  
 3rd.—Bright early; overcast morning up to 10.30, then bright rest of day.  
 The first week since January in which the temperature has been below the average, and even this is but very slightly so.—G. J. SYMONS.





## A NEW TOMATO DISEASE: BACTERIA.

—x—

I HAVE long been a reader of the *Journal of Horticulture*, and being greatly interested in Tomatoes, I always read everything I see in any way connected with their culture, but I have not seen any mention made in your columns of a disease—if disease it is—that is very prevalent among Tomatoes in this locality. Before coming to this place, nineteen months ago, I never saw a plant affected by it, but during last summer and again within the past two months I have lost several plants, and seen probably hundreds in different gardens, besides hearing of others in various places I have not visited.

The plants die suddenly, sometimes entirely collapsing in a few hours, at other times it is several days after the lower leaves droop before the plants die. I grow them in pots, and planted out in a house facing east, another west, another nearly north, and a span-roofed house facing east and west, where they get the sun from its rise to its setting, and in every house, in pots and planted out, I have lost a few plants. One friend has told me it is caused by too much water, while another says they have not had enough. But against this I should say I have tried to kill certain plants by watering considerably oftener than required, and others I have kept dry, letting them go without water for days together, but could not succeed in killing one by either method.

I have had seed each year from a man who has never been troubled with the plants dying thus. They die in all stages of their growth, from small plants a foot high (rarely before they attain that height) to plants 6 to 8 feet high, with a full crop of fruit.

I hope my letter will be the means of bringing forward some interesting communications respecting Tomatoes and the diseases of which their stems, leaves, roots, and fruits are susceptible.—CHARLES LOCK, *Bristol*.

I SEND a Tomato plant, and the roots of another. Several amongst my crop have gone off in the same way. The leaves flag and then wither, some plants die entirely, others shoot out again round the bottom. I send also several blooms which have dried and fallen from other plants in good health. The Tomatoes are grown in houses heated to about 60° at night, higher in the day, always a little air at night, and plenty during the day. Occasionally on extra cold nights the thermometer has fallen to 55° and even 50°. An answer in the *Journal of Horticulture* will oblige.—X. Y. Z.

[As Mr. G. Abbey is devoting special attention to diseases of plants that are more or less obscure in their origin and action, we sent him the specimens referred to for a searching microscopic examination. The following is his report thereon:—

“The specimens have been carefully examined. They are not infested with fungi nor attacked by eelworms, but swarm with bacteria. The root-part of one plant was completely dead, every portion of the stem and the root tissues being entirely decayed and taken possession of by fungi, which generally accompany decay, and are only found on dead—never on living—vegetable matter. The other plant was alive—that is, its tissues were full of sap except the root portion, this being more or less dried, and the whole thoroughly infested with the spores of a bacterium hitherto unnamed, but which as it was first discovered by the eminent American

scientist, Dr. Byron Halsted (‘Bacteria of the Melons,’ *Botanical Gazette*, November, 1891), I shall refer to as B. Halstedii. We may say that the disease is equally fatal to Gourds, Squashes, Vegetable Marrows, also Cucumbers or Melons, and it is the same that attacks Tomatoes. The attack is marked by a decay of the stem in proximity to the root, and then the whole plant collapses suddenly—sometimes in a few hours. This, however, is not always the case, for occasionally one or more leaves will turn a sickly yellow and the plants die slowly. In many cases the fruit does not exhibit more signs of disease than a few yellowish specks.

“The root portion of the plant examined consisted of tissues teeming with bacteria, the whole being destroyed and incapable of transmitting sap, consequently the leaves fell, and the stem would of course fail in due time. A transverse section through the stem on the seemingly live part revealed a discoloured band immediately below the bark, entirely extending around the inner woody portion and pith, and the watery tissue contained a multitudinous host of bacteria. Making a transverse section through the petiole of the leaf, innumerable bacteria were found. Then a transverse section of the fruit disclosed one side discoloured, and the other proved to be so under the microscope, but there was a difference: 1, The discoloured side contained only one kind of bacteria—the same malignant form as found in the stem and petiole of the leaf; 2, the side of a normal colour teemed with bacteria of a globular form, and there was not 10 per cent. of the other form, which is roundish oval, interspersed.

“A drop of juice taken from the stem contained spores much smaller than the active bacterial form in countless numbers. Another drop from the petiole of the leaf also teemed with bacteria, and a drop of juice from the discoloured portion of the fruit swarmed with the animalculæ of the malignant order, and about 3 per cent. of the globular. One of the latter forms had become oval; attached to its outer surface were some small oval bodies, and they manifestly were eating it. A drop of juice from the seemingly half-and-half mixture of fluids between the discoloured and normal portion of the fruit contained about an equal proportion of the perfectly round and the much smaller oval bodies, but the globular bodies were far more minute than in juice from healthy tissues; yet one of the full-sized globular bodies had within its central orifice four full-sized and three half-grown oval-shaped bodies, and they were already causing the globular body to assume a pointed oval form. A drop of juice also from the apparently healthy portion of the fruit contained at least 87 per cent. of the globular bodies, and the 13 per cent. of oval bodies interspersed with them were much smaller than those in the diseased tissues, and so far as we could determine inert.

“Now, the perfectly globular bodies with a transparent centre or hole through them are found in all pure water, more abundantly in winter than in summer, from wells and springs, they being scarce in summer in those waters, and are never found in impure water, dirty pools, and polluted streams. They increase from the centre, throw out a bud, and a perfect globular body launches forth in less than twenty minutes on its errand of health to man and beast and plants, for they love pure water—that of the clouds. Any kind of water will not do for plants, and it is possible that the malignant bacterial spores may be introduced with impure water, especially liquid manure.

“The other body—Bacterium Halstedii—also increases by division, it is said in the centre; but the roundish oval bodies certainly bud from the blunt end of the oval, sometimes pushing two buds from near the crown, and not unfrequently from the small end. This goes on indefinitely, and the bodies occasionally lie in heaps and appear concatenate; but they easily separate on the introduction of a thinner fluid such as water, or upon sap passing through diseased and carrying them with the flow into healthy tissues. The foregoing is what the specimens revealed, and the results are



given at length, so that any careful examiner may verify the statements by the aid of the microscope.

"The disease, the micro-organism, has not attached itself to the seed. This takes place later, when the whole of the fruit becomes a decayed mass, the firm skin still holding the watery interior in shape, and then it is that the spores or germs of the microbe become attached to the fruit, and may be so transmitted to any part of the world. Perhaps this Bacterial disease has been introduced from America, for it is comparatively new, and certainly of Western rather than Eastern origin.

"That the Bacterium Halstedii is the cause of the disease can easily be determined by taking some of the liquid from a diseased plant and introducing it just beneath the skin of a perfectly healthy plant. If on a fruit the virus may run through it in three or four hours, if on a soft part of the bine or stem in three or four days, and if on the stem near the root it may take several days to destroy the plant. The inoculation is certain to produce the disease on hard parts without a swelling, in softer parts it may produce an hyperthropy, and it never fails to rapidly produce a decay which causes the leaves to "wilt," the stem to shrink, and the fruit to become a watery mass. There is no remedy so far as is at present known, and the only preventive process known is to pull up the plants and burn them, clear out the old soil and replant in fresh, never saving seed from infested plants, and avoiding vegetable matter and animal manures."

We think our readers will agree that the above report, embodying investigations by a practical gardener, may be considered somewhat remarkable. Mr. Abbey has previously afforded evidence of his talent for microscopical work, and his capacity for taking pains in the representation of and discovery in connection with the Hazel bud mite (page 321, April 20th), and in the present issue (page 481) it will be conceded that the orange fungus attacking Roses is ably portrayed and treated. In recognition of our correspondent's aptitude in investigation, and at the same time having in view the importance of the subject of the comparatively new Tomato disease, as well as of drawing the attention of men of science as well as practical cultivators to it, we give the subject prominence in these columns.]

## MARKET PRICES AND PRODUCE.

HAVING in view a good deal of correspondence which we have received from time to time on this subject, we desire to direct attention to the communication of a "Market Grower" on page 451, last week, as we think it contains some wholesome truths that may well be kept in mind both by owners, growers, and packers of fruit; while the discoverers of errors in current price lists may do worse than ponder over some of the remarks of our experienced contributor. Persons who are new to the business of growing produce for market have much to learn, whether they are amateurs or gardeners, and much they do learn if they persevere as our correspondent has done; and we are glad to know that he has turned his knowledge to good account. He has grown old enough to be convinced that persons who live in the market, and whose lives are spent in watching fluctuations in supplies and values, are more capable of representing quotations than are persons miles away, and who arrive at conclusions on wholly different grounds. Prices shift from day to day, and sometimes there is great variation in an hour. We have known Tomatoes priced at 1s. 6d. a pound, which has been challenged as a shilling too low because some were sold at 2s. 6d. a pound, while during the same week costermongers' barrows were piled with fruit selling at 3d. a pound through the arrival of a cargo from a southern clime. Inexperienced outsiders will never become famous in challenging the accuracy of published lists of market prices, especially when these represent actualities on a certain day, and which denote as well as the business transactions of one day can do the state of the market during the week.

The practice of copying prices of fruit from choice samples in fruiterers' shops by ladies and gentlemen, and concluding therefrom that the surplus produce sent from their own gardens for sale should realise anything like equal amounts, is based on the assumption that their own "garden stuff" not wanted at home is

equal to the best picked samples from the entire kingdom, and outside it—a fact which has only to be mentioned to show the absurdity of the proposition. A much truer and fairer method of appraisement is in taking the general average of the market returns. It is a fact also that not one private gardener in a hundred has anything approaching equal conveniences with those market gardeners who make special provision for special crops, and concentrate attention on them.

Our correspondent has also found out the truth about salesmen. That there are sharpers about in connection with all vocations or no vocations is true; but it would be as fair to say that all gardeners are rogues because of the rare occurrence of one being found in jail as to suppose that fruit, flower, and vegetable brokers are swindlers because perhaps once in a generation a salesman may be turned out of Covent Garden for low catch-penny conduct. The recognised business men who are established in this and other markets deal as fairly and honourably with their clients as do any other body of men in London, or they would not be where they are or what they are to-day. They are a most useful body—agents in the distribution of produce that growers themselves cannot convey from door to door and shop to shop; and those growers who cannot attend markets, and who send the most and the best goods to salesmen for disposal on commission, are just those growers who make the most money for themselves, and these do not grumble at agents' methods or market customs.

The remarks of our correspondent on grading and packing fruit are significant. It is home negligence in these matters broadly speaking, that gave growers in other lands the opportunity to establish themselves so firmly in our markets, and though it is humiliating to say it, the truth must come out—namely, foreign fruit in the bulk is preferred to our own—American Apples for instance, both brokers and purchasers having more faith in large consignments in barrels than in home-orchard produce in hampers. Nine fruit-selling grocers out of ten prefer barrels to hampers, and American to English Apples, save and except when the latter are well grown, graded, and packed by men who have good names in the market. It is much the same with other fruits. Mr. Webber of Covent Garden has more than once remarked that there is no lack of able men to grow first-class fruit, but after all their care and labour they spoil it in the packing. It is pitiable to see the deplorable condition in which so much arrives for sale. Then the vendors are surprised that it "fetches nothing." They would, perhaps, be not less surprised if they could see their own fruit when unpacked, and they certainly would "not know it" except by the baskets and labels.

The last words of advice by "Market Grower" ought to be deeply impressed on the minds of all who are engaged in contributing to the fruit, flower, and vegetable supply. Those who are the first in the market with the best of produce need never fear a good sale; but inferior "stuff" during periods of "glut" is better anywhere than in Covent Garden, and sending small, fitful consignments of ordinary produce there is not likely to be very remunerative.

## PRACTICAL HINTS ON MELON CULTURE.

(Concluded from page 430.)

FEW things are more annoying to the gardener than to find an apparently healthy Melon plant, carrying a good crop of well-developed fruits, suddenly begin to flag, and in the course of a couple of days collapse altogether. Every effort should be made to prevent such occurrence by fighting diseases or insects in their early stages, and in nine cases out of ten serious damage may be obviated.

Canker is undoubtedly the most troublesome disease with which Melons are affected, and if remedial measures are not promptly employed the plants quickly succumb. This vexatious disease assumes various forms, and is brought about chiefly by too much atmospheric moisture, in conjunction with faulty ventilation and an excess of moisture at the roots. Canker at the collar is the most to be dreaded because it is frequently not discovered till too late for remedies to be effectively applied. Plants attacked at this point, if cut asunder at the junction between root and stem, will generally be found soft and discoloured for about half an inch above and below the cut, while every other part of the roots and stem may be quite healthy. This clearly proves that the conditions which engender disease were present only at that point, or else that the stem is more susceptible to it at the collar. The latter conjecture is, I think, the correct one. Assuming that it is so, this shows the soundness of the practice of keeping the soil dry around the collar of the plants. Even when this has been done I have known plants canker badly at that point. This I believe to be caused by closing too late, using moisture freely at the same time, and providing little or no fire heat at night. No matter how



hot the weather may be, the house or pit ought to be closed early enough to allow the moisture to become evaporated, and a little fire heat at night is beneficial. The top ventilators can then be left open a very little throughout the night, which creates a buoyant atmosphere, and favours the production of short-jointed growths and rich leathery leaves.

Another frequent cause of canker is the lodgement of moisture upon freshly made wounds. Should the main stem become bruised in any way the outer tissues decay, and the natural protection of the softer portions of the stem are thus destroyed, condensed moisture, or that applied with a syringe, sooner or later reaches the bruised parts, and quickly makes short work of the plants unless remedies are applied. Wounds made by the removal of superfluous leaves or shoots often bring about the same results. This is especially the case when these wounds are shaded by other parts of the plant. I have frequently noticed that canker seldom attacks a shoot which has throughout been well exposed to light and air, as the wounds made in thinning or stopping the shoots heal quickly; such growths are firm and wiry.

The best way to prevent canker is to secure short-jointed healthy growths by training them thinly, and maintaining the proper temperature, moisture, and ventilation, according to directions given in previous issues. Keep some newly slaked lime and soot in equal proportions always in readiness, and when shoots are stopped or leaves removed place a little of the mixture upon the wound made. Continue the application until the wound is dried, and pursue the same course when necessary. When traces of canker are discovered shade the plants. If the affected part is near the collar scrape it carefully with a sharp knife, and dress with a mixture of equal parts newly slaked lime and powdered charcoal. Rub this into every particle of the diseased stem, then heap some of the sound materials around it, and repeat the operation twice daily until the tissues are thoroughly dry. Sometimes a stem will split right through and begin to canker on either side; but there is no occasion for despair even then, for by carrying out the above instructions the wounds will generally heal sufficiently to enable the fruits to be brought to maturity. Ventilation and fire heat should be gradually increased, and atmospheric moisture lessened when canker is perceived, water at the roots being also sparingly applied.

Gumming sometimes gives considerable trouble, but this disease is not nearly so common as canker. It is generally caused by growing the plants too strongly, giving too little heat, and too much moisture at the roots. Lessening the supply of water and airing more freely, yet judiciously, will usually arrest its progress. Plants grown on a manure bed or in a pit are the most subject to gumming.

Red spider frequently proves troublesome. With good culture, however, this pest may easily be kept under till the fruits begin to ripen; there is then scarcely time for much harm to be done. The best preventive is syringing two or three times weekly with clarified soot water. If these insects gain a footing every leaf affected should be carefully sponged with a weak solution of soft-soap and water. The hot-water pipes may also be painted with sulphur, but this should only be done in the case of a severe attack. Some cultivators recommend syringing with soapy water, in which a little sulphur has been mixed; this I have tried, but found the leaves were badly disfigured if the solution was used at a sufficient strength to kill the red spider.

Green and black fly may easily be kept under by fumigating on two successive evenings with McDougall's tobacco sheets when these insects are visible. Lethorion cones answer the purpose equally well.

Almost every cultivator has an especial liking for some particular variety. To my mind there is no better Melon grown than Hero of Lockinge. Suttons' Imperial Green and Windsor Castle are also excellent representatives of the green and white-flesh kinds. Blenheim Orange, Suttons' A1, and Hero of Bath are a trio of splendid scarlet-flesh varieties. For growing in pits I know of none better than Golden Perfection, Hero of Lockinge, and Victory of Bristol.—LABOR OMNIA VINCIT.



LÆLIA HYBRIDA MAYNARDI.

At the last meeting of the Royal Horticultural Society a silver-gilt medal was awarded for the best seedling Orchid not exhibited

previous to January, 1893. This, as announced in our last issue, was won by Messrs. F. Sander & Co., St. Albans, who staged a beautiful bigeneric hybrid named *Lælia hybrida* Maynardi. This is the result of a cross between *Lælia pumila* Dayana and *Cattleya dolosa*, the former being the seed parent. A specimen of this hybrid was shown at a previous meeting in February, when the Orchid Committee adjudged an award of merit for it. The flowers



FIG. 85.—LÆLIA HYBRIDA MAYNARDI.

are very attractive. The sepals and petals are rosy purple with darker veins, and the lip is a dark purplish crimson. Fig. 85 represents the flower of this charming hybrid.

#### ANGULOAS.

THESE plants, when well grown, are very striking in appearance, and the structure of the flowers is remarkable. The different species do not vary much in shape, being like Tulips. The lip is balanced on a kind of hinge, which rocks to and fro when the flower is moved, hence the English name "Cradle Orchids."

All the Anguloas require cool treatment, with plenty of water while growing; but after the leaves have fallen they must be kept drier, but not sufficiently so to cause them to shrivel. They should be repotted in early spring in peat moss and a little fibry loam; the pots must be well drained, and the plants kept well up. *A. Clowesi* has large yellow flowers. *A. eburnea* and *A. uniflora* are white, the latter sometimes spotted with brown. *A. Ruckeri* has purple spots on a yellow ground, the variety *sanguinea* being blood red inside, reverse yellow, and is very beautiful.

#### ONCIDIUM CONCOLOR.

This is a charming little species, and one of the most attractive of cool house Orchids. The pseudo-bulbs are about 1½ inch high, furrowed, and bearing two leaves about 7 or 8 inches long. The graceful pendant racemes appear in early spring, and are each about a foot in length. The flowers are bright yellow and last a long time in perfection.

#### ONCIDIUM FLEXUOSUM.

This is, to a certain extent, a neglected Orchid, not in the number of plants that are grown, but in the treatment they frequently receive. Many growers keep it in the cool house, and here it grows fairly well, but it will do much better in an intermediate temperature provided there is a good circulation of air and plenty of atmospheric moisture. Here the plants seem to thoroughly enjoy life, the large bulbs and vigorous flower spikes being ample evidence of this.

Plenty of sphagnum moss should be used in the compost for this Orchid, and it must be kept growing to form a green cushion under the new pseudo-bulbs, the young white roots revelling in the moist moss.

The uses of this Orchid are many and varied. Small, well flowered plants are excellent for grouping, the spikes when cut are serviceable for the tops of epergnes, smaller pieces "making up"



well for buttonholes and sprays. It is also frequently used at shows in the classes for stove and greenhouse cut flowers, the feathery spikes giving lightness to the stands and contrasting well with the bright Anthuriums which often accompany them. In short, there is hardly any arrangement of cut flowers or plants that cannot be improved by the addition of this old but very graceful Orchid.—H. R. R.

#### ODONTOGLOSSUM HARRYANUM.

THIS is a very free-flowering, remarkably handsome, and distinct Odontoglossum. It was introduced in 1886 from South America, and since then it has found its way into most gardens in which Orchids are grown. If the plant be given a well-drained pot and a compost of sound fibrous peat, chopped sphagnum moss, and crock dust as a rooting medium, the temperature of an ordinary plant stove or the cool end of a Cattleya house to grow in, and be kept uniformly moist at the roots, it will thrive and flower satisfactorily. The crinkling oblong flowers, consisting of purplish-brown sepals streaked with yellow, with petals white at the base, and having broad irregular bands of purple, and white lip striped with purple, are very showy in appearance, and easily recognisable from any other variety of the large and beautiful family of the Odontoglossum.—H. W. W.

#### VENTILATING ORCHIDS.

WILL some of your numerous correspondents kindly advise me as to ventilating the following Orchid houses, the plants in which are not doing well? First, the Odontoglossum house is kept heavily shaded on bright days with very little air, the temperature often rising to 75° and 80° on warm days, and 55° to 60° at night. Secondly, the Cattleya house, with a thick blind and no air till 8.45 A.M., allowing the temperature to rise to 80° or 85° before ventilating, with much moisture on the floor, stages, and at the roots. The plants make weak growth, and fail to flower well; I say they do not have sufficient air, but am over-ruled. Thirdly, a mixed house of Orchids, with a temperature of 80° before ventilating, day temperature 80° to 85°, and 70° at night, with much moisture about them. The plants go sickly, turn yellow, and finally die. If anyone will give me some hint on airing and general treatment of the above I shall feel greatly obliged.—J. E., Dorking.

#### MR. W. BULL'S ORCHID EXHIBITION.

FOR some years past the annual Exhibition of Orchids at Mr. W. Bull's Nursery, King's Road, Chelsea, has been an event of special horticultural interest, and this season the Show is no exception to the rule. The plants are tastefully arranged in a long span-roofed house, and make a charming display. The centre and side stages are filled with Orchids in bloom interspersed with Anthuriums, Palms, and other foliage plants. Many of the Orchids possess enough colour to make a rich and varied display, but the brilliancy of the Anthurium spathes adds considerably to the Exhibition, which is well worth a visit. Some of the blooms are perhaps a little past their best, but there is still sufficient to interest even the most fastidious connoisseur in Orchids.

The Cattleyas and Lælias are the most conspicuous, and of these there are some very fine forms. Cattleya Mossiæ marginata is a distinct variety, which shows up prominently amongst the rest. The sepals and petals are a rosy mauve, the lip rich purplish crimson with an orange throat. There is a well defined white margin on the lip, hence apparently its varietal name. Another beautiful form is C. Mossiæ aurea. This has bright rosy mauve petals and sepals and a charmingly marked lip. Of no less importance is Mossiæ majestica, a most distinct form, with pale rosy sepals and petals, and a bright lip. A very pretty variety of C. Gaskelliana, with richly coloured flowers, was noticeable; and the same may be said of C. Mendelli superba, which has a grand lip and pure white sepals and petals.

Among the Lælias, the various forms of L. purpurata are well represented. One of the best of these is L. purpurata rubella, which has light rosy mauve sepals and petals and a very richly coloured lip. The beautiful L. grandis tenebrosa was also noticeable, there being some splendid flowers of this variety. The bright yellow sprays, of an enormous size, of Oncidium macranthum formed a delightful contrast to the more formal blooms of the Cypripediums, which are well represented. Amongst others the pretty C. Stonei and C. superciliale are exceedingly good. Dendrobiums also form a feature in the Exhibition, as likewise do the showy Epidendrum vitellinum majus, Saccolabiums, and Cymbidium Lowianum eximium. Of the latter there are some very fine plants. Lycastes, Masdevallias, and Angræcums add interest and variety to the display.

In addition to the large structure referred to there are two other houses filled with Odontoglossums and Miltonias now in full

bloom. One house devoted to Miltonia vexillaria in great variety, the most conspicuous of these being M. vexillaria rubellum and a charming form known as M. v. roseum. The Odontoglossums are also exceedingly good, especially O. citrosimum and O. crispum, of which there are some superb forms.

#### PACKING PEACHES AND NECTARINES.

MANY and various are the methods of packing Peaches and Nectarines adopted, but if all presumably answer the purpose of those who follow them it cannot be truthfully asserted that there is no room for improvement, in some of them at any rate. As a matter of fact, much valuable fruit is practically spoilt owing to either careless or faulty packing. No fruit is more easily bruised and disfigured than ripe Peaches; and what is also a very important point, no fruit is more quickly tainted in flavour owing to being surrounded or enclosed in either scented boxes or strong-smelling packing material. So susceptible are they of being affected in flavour by contact with scented or musty material that Peaches, and in a lesser degree Nectarines, after being gathered ought never to rest on anything but fresh tissue paper with a padding of some kind underneath. Fruiterers sometimes display them on fresh Vine leaves, but those who know their business take good care to remove the leaves before night arrives. Naturally some varieties are superior in point of quality to others, Royal George, Bellegarde, Crimson Galande, and Grosse Mignonne being among the best, but the majority of other sorts are quite good enough for most people, and if not first-rate in flavour there is all the more reason why every care should be taken to guard against tainting them.

Peaches and Nectarines to travel well ought not to be quite ripe when packed, nor in any case should they be left on the trees till the falling stage is reached. They keep better, travel with least damage, and are really more luscious and richly flavoured when the full ripe state is anticipated by at least one day. Any required for home consumption, or which are to be packed for private use soon after reaching its destination, ought to be gathered directly the fruits are slightly soft at the base. Lightly pressing the under side of a fruit that appears to be ripe enough to test will not injure it, but there must be no finger or thumb marks on the upper surface or the fruit will be very conspicuous, and decay also set in early. For the markets an appearance of ripeness, and in particular plenty of colour, is most needed; slightly under-ripe fruit best meeting the case. Fruit that is inclined to cling to the trees must not be roughly dragged away, or thumb marks will detract considerably from their value; but the gatherer should have a pad of cotton wool in his left hand with which to firmly grasp the fruit, and then, where possible, to cut through the footstalk with a pair of Grape scissors. Nectarine Lord Napier is one of the most difficult to gather without bruising, and the pad and scissors ought certainly to be used for detaching the variety from the trees. If all the trees are examined every morning, and each fruit fit is gathered, there will be no necessity for suspending nets under them. The latter only break the fall, and do not wholly prevent bruising.

Opinions vary both as to the form of box and packing material for Peaches and Nectarines. The fruits vary greatly in size and form, some being extra large both as regards depth and circumference, others being flat and of a good breadth, and still more comparatively small in every way. The boxes, therefore, ought also to vary considerably, it being little short of madness to pack deep fruit in shallow boxes with an insufficiency of packing both above and below to prevent bruising, while very deep boxes are unsuitable for small or flat fruit owing to the unavoidable springiness and eventual shrinkage of the packing material. What market salesmen favour are boxes 24 inches long, 14 inches wide, and 4½ inches deep, these holding twenty-four fairly large Peaches, and rather more Nectarines. These, however, are scarcely deep enough for Sea Eagle, Walburton Admirable, and large fruits of Barrington Peaches, and are larger than are required for fruit from very heavily laden trees. It is advisable to have boxes made for private use in sets, the depths being varied. If there are no opportunities of getting them made very cheaply in the neighbourhood they can be obtained for surprisingly low figures from advertising makers. I find cheap, light boxes from grocers and confectioners answer well for sending by post, being also frequently used when there is no likelihood of the receivers returning the empties. Market salesmen and leading fruiterers now-a-days are always ready to send boxes and baskets suitable for any kind of fruit that is to be consigned to them, and all things considered it is much better to have their boxes than to provide for oneself. Boxes with separate compartments for each fruit are a great mistake.

We have next to consider which is the best kind of packing material out of the several available. Experienced packers largely favour moss for Peaches and Nectarines, and it is extensively used for



the purpose, especially by senders to markets. When abundance of clean springy moss can be raked up from lawns or otherwise collected and dried, well beaten, and thoroughly cleared of rubbish, it answers well, and is the cheapest material that can be had. Unfortunately moss is by no means generally plentiful, at least not such as may be said to be fit for packing soft, easily tainted fruit in. Coarse, earthy-smelling moss will not do, and small quantities of that which is suitable are of little value. Moss must be used freely and not gingerly. First line the boxes with sheets of packing paper, and then place a firm layer of moss not less than 1 inch thick in the bottom. Wrap each fruit in a square of tissue paper, bringing the points of the latter well up together over the nipple of the fruit, and then place in the box and completely surround by moss, enough of the latter being used to well divide the fruit. The base of each fruit ought always to rest on the bed of moss in the bottom of the box, and only the tips of the paper protrude above the same material when finishing off. The lid should press down rather tightly on the paper and moss, the packing being so firmly done as to prevent any movement inside the boxes when these are tested by shaking rather violently. If the packing will not bear this test at the outset, what state will the fruit be in after a certain and inevitable amount of shrinkage accompanied with some rough handling has taken place?

Paper shavings are sometimes recommended as a substitute for moss, but according to my experience they do not answer well, it being a very difficult matter to prevent the fruit shifting in them, and bruising accordingly. Bran is even worse, while the coarser kind of wood wool or shavings is too harsh, too springy, and too strongly scented to be suitable for packing Peaches and Nectarines in. More recently a superior kind of wood wool has been introduced, this being much softer, and if well opened out and cleared of dust a few hours prior to using there is no smell perceptible. This I am now using for Peaches and Nectarines instead of cotton wool as formerly, and as yet there has been no complaint either of the fruit travelling badly or of being tainted in flavour. I have hitherto found Peaches and Nectarines travel better in cotton wool than any other material, always provided each fruit is carefully enclosed in soft paper, and then bound round with folded strips of the wool of sufficient width and in such a manner that the latter shall prevent the fruits touching each other or the box. Cotton wool ought always to be folded skin side outwards, and even then should never come into contact with fruit. When returned it should be dried prior to being used afresh, as it is apt to become moist, also heating slightly, and smelling strongly.

I now use the improved wood wool. The boxes are thickly and firmly padded with it, and after the fruit have been enclosed in squares of tissue paper each has a bandage of wood wool wound round it, all being gradually packed closely and neatly together. The box lids closing down tightly on the points of paper and upper part of bandage, there is no shifting of the fruit afterwards. This plan of bandaging the fruit will be found to answer better than burying them in nests formed in a well-filled box of wood wool, as in the latter case the elasticity of material is apt to gradually reverse the position of the fruit. The fewer nails used in fastening down the better, but the boxes may well be stringed together, and very plainly labelled "Fruit, with care."—MARKET GROWER.

## SOME GOOD ALPINES.

### MORISIA HYPOGÆA.

THIS little plant, which will ere long be eagerly sought after by those who wish to possess the choicest and rarest of the gems of the alpine flora, is not, as is generally imagined, a novelty in this country. It is, however, like many other plants, one which had apparently disappeared from our British gardens, and which has only recently been re-introduced. It was, I understand, figured in the second series of Sweet's "British Flower Garden;" but as I have not access to that work, I am not in a position to state if the figure there given is a faithful representation of the plant. No notice of it appears in Mr. George Nicholson's invaluable "Dictionary of Gardening," but a brief reference appears in "Paxton's Botanical Dictionary," and in the old edition of the "Cottage Gardener's Dictionary." From these and other sources we learn that it was discovered on the Sardinian mountains by Professor Morris, and it is to Cassini that we owe its relegation to a separate genus under the name of *Morisia* in honour of the finder. The specific name *hypogæa* is given on account of its habit of burying its seed pods in the soil. Its original introduction is said to have been due to seeds brought from a botanic garden in Turin in 1833, and it is understood to have been first flowered in this country in 1834. It appears to be quite hardy, and from its disappearance from this country we can only conclude that it had not become widely distributed. For its re-introduction I understand we are

indebted to the recommendations of Mons. H. Correvon of the Jardin Alpin d'Acclimatation, Geneva. The date of its re-introduction appears to be 1890, and it is to be expected that the ease with which it may be propagated will ere long enable it to make its way rapidly to the gardens of the admirers of alpine flowers.

*Morisia hypogæa* forms a dense tuft only an inch or two in height, formed of pretty shining green leaves. These have been described as runcinate, and on turning up the definition of this, which is that "a leaf is said to be runcinate when it is irregularly lobed, the lobes gradually diminishing to the base, and hooked back;" and comparing it with a leaf from one of my plants, one can safely say that the term fairly describes the form of the somewhat thickish leaves. The flowers, produced singly on short stems, are clear and bright yellow, and are nearly the size of a shilling. It is well, however, to state that the one defect of the plant is that the neat and pretty blooms have a tendency to conceal themselves among the foliage instead of standing boldly above it. They appear in April and May. As already said, it seems to be hardy, and judging from the test of the past winter, which was the most severe here for the past nine years, I have little doubt that it will stand the winters we generally experience.

In my garden a small plant was put in gritty sandy peat in a pocket on a rockery facing south-east, and as it was unprotected, in order to test its hardiness, it was satisfactory to see that it survived, although severely "scorched." This plant flowered in due course this spring, but, judging from the character of the foliage, I should be disposed to place a piece of glass over the plant during the winter in such a manner that the air should have free access. A rich gritty soil is a suitable one for this *Morisia*, and judging from the way in which the roots have attached themselves to fragments of shells which were in the soil, it will probably be found to prefer limestone or chalk in the compost. It is readily increased by division or by cuttings; but I have not yet ascertained if it ripens seed in this country.

### LINARIA HEPATICÆFOLIA.

There are several admirable plants among the alpine *Linarias*, and the Hepatica-leaved Toadflax (*Linaria hepaticæfolia*) has a neatness and beauty all its own, which render it well worthy of a place in a collection of rock plants. It is, however, not very frequently met with, and I had some difficulty in obtaining a plant when it was desired some years ago. A figure of *L. hepaticæfolia* appears in Wooster's "Alpine Plants," 2nd series, plate iii. Neither the artist nor the writer of the descriptive notice can, however, be congratulated, as the plate is far from being an admirable representation, and the letterpress is disappointingly meagre.

The Hepatica-leaved Toadflax is a native of Corsica, and forms a dense carpet of creeping foliage scarcely rising above the surface of the soil, and prettily bedecked with its small purple-lilac and white flowers, smaller and less showy than many others of the genus, but still very attractive. The leaves are cordate-reniform, three to five-lobed, and of a pleasing green colour. If grown in a pot or placed at the front of a ledge of the rockery the plant will extend until it hangs gracefully over the rock or pot. *L. hepaticæfolia* is hardy here, and is grown in sandy peat with an admixture of grit on a rockery facing south-west. If planted in suitable soil and receiving an adequate supply of moisture in dry weather in spring it will soon fill a good space, and will give great pleasure to those who see it.

### GYPSOPHILA REPENS.

In walking round my garden to-day the beauty of a plant of the comparatively old *Gypsophila repens* trailing over a slab of fossil limestone so impressed me that I feel it impossible to refrain from calling attention to it. It is now understood to be synonymous with *G. prostrata*, and the variety with which I was so much delighted is the white one, which is forming a cloud of foliage and flower presenting the appearance of beautiful lacework.

The introduction of *G. cerastioides* has placed this species somewhat in the background, but it is hardly possible that it will long remain neglected, and I venture to think that a large plant well displayed would attract much admiration in an exhibit of alpine flowers. *G. repens* is a comparatively old plant in our gardens, having been introduced in the latter part of the last century from Siberia. It is, I believe, also a native of the Alps of Europe. The generic name given by Linnæus is derived from the Greek words *gypsos*, lime, and *philein*, love, and is expressive of the partiality of the *Gypsophilas* for a calcareous soil.

The species under notice is no exception, and should be grown in a light soil with a supply of chalk or limestone. It is frequently stated to grow about 5 or 6 inches in height, but this, while literally correct, is rather misleading, as the branches extend to a considerable length, one plant here having these 18 inches in length. It will readily be supposed that a plant of this character is seen to



more advantage when trailing over a ledge of rockwork, and its linear, glabrous leaves and its multitude of white or pinkish flowers will form a feature in the garden from May and June to September.

A sunny position is the best for a display of its beauty. It is readily increased by means of seeds. *G. repens* is figured in Maund's "Botanic Garden," vol. i., plate xxx., under the name of *G. prostrata*, but only a small portion of the plant and flower being shown no idea of the habit is given.

#### ANTHEMIS AIZOON.

Distinct in every respect from any of the foregoing, *Anthemis aizoon* is yet worthy of a place in the collection of alpine, possessing as it does the merit of floriferousness, which induced Linnæus to give to the genus the name *Anthemis*, from *antheon*, a flower. It begins to flower in early summer, and continues to bloom for a considerable period. The blooms are rather Daisy-like, but with much broader ray florets, which are white, the disc being also whitish with a tinge of yellow. The leaves are lanceolate and deeply serrated, and they are so covered with down as to present a greyish appearance. *A. aizoon* grows variously from 2 to 5 inches in height, and is extremely neat and compact, even at the latter height, which is almost reached in my garden.

Its requirements appear few, and of its hardiness there seems no doubt, as it stands our winters without protection. I grow it on a rockery facing south-east, where it is placed in a pocket filled with sandy loam. This neat and pretty little plant is a native of northern Greece, and may be increased by means of seeds or cuttings.—S. ARNOTT.

### INSECTS OF THE FLOWER GARDEN.

(Continued from page 413.)

THOSE much disliked and very abundant insects, the spiders, have certainly few friends amongst gardeners, nor is this at all surprising. The mention of their name calls up recollections of shrubs and plants disfigured by their webs, of the frequent transfer of these to the dress while we are occupied in the garden during the season when spiders are most active, and of the occasional travels of the insects themselves amongst the hair or up the sleeves. Spiders there are again, mostly of small size, which annoy the gardener by their habit of entering flowers; sometimes, it would seem, this is to secure a little undisturbed repose; sometimes, too, they lurk in the flowers that they may pounce upon insects visiting them to obtain honey. But, as I have more than once remarked to friends, we have the satisfaction of knowing that our spiders are innocuous. I have never, after much inquiry, been able to find a single instance of a British spider biting any human being, though some of our larger species could probably pierce the skin and inflict a painful wound, if a small one, by injecting poison. Some of the species of hotter countries are known to do so when people are careless about avoiding them or come upon them unawares, and the bite of several species is apt to be very dangerous. Then, again, with regard to our spiders; there is much to be said on their behalf, as busy destroyers of many insects that are troublesome about gardens it is hardly advisable that we should try and expel them altogether from our flower beds could we manage it, though we may not leave all their snares undisturbed. And it has also been asserted that spiders are weather-wise, hence may render us service as natural barometers. It is supposed by their restlessness they may foretell the approach of a storm or gale, which they particularly dislike; and diligence exhibited in web-repairing after a downpour of rain indicates an approach of better weather, if not they hide and remain quiet.

The number of eggs deposited by some of our common garden spiders is large, and a friend who noticed this circumstance asked me how it is the balance is kept even from year to year, for we do not find any great variation in the numbers of these species during different seasons, certainly no marked increase. If the majority of those hatched lived to be adult spiders there would be such an increase; evidently only a part of each brood survives. Some people think young spiders prey upon each other extensively. I rather doubt if this is the case; occurring in companies as they often do, they seem to be amicable together then, though in time they become suspicious of each other. Many juvenile spiders die of the feebleness caused by the changes of skin, which are frequent in their early stage; some are undoubtedly carried off by birds, and some are eaten by other insects, a natural sort of retaliation upon species that are notable insect killers throughout nearly all their lives. Probably the bulk of the spider race are strictly "annuals," but some species are known to be "biennials," passing the winter in crannies and corners, and it is supposed that there are instances of spiders living longer than that, three or even four years. Like

other insects of prey, they can endure a fast of many days, and those that live through the winter eat only now and then. At that season, and also about the end of the autumn, the bags of spider eggs are very observable on walls or palings, and they may easily be crushed if that is thought desirable, but there are good reasons for leaving them alone.

I cannot dwell upon the numerous and curious facts connected with the structure of the spider's web, but only remark, in brief, that the thread or silken cord of which it is formed is composed of a host of extremely fine threads joined together, which issue from the spinnerets at the tail. The ordinary working thread may contain from 2000 to 6000 of these. Another notable fact is that peculiarity of the web which in the usual way enables the insect to move about on it, while the prey is generally entangled. Here and there upon the web a spider places drops of a sort of gummy substance, different from the silk, and by contact with these the fly or other victim is held till the spider can secure it by silken cords ready for eating. But by instinct, while it distributes this gum over a great part of the web the spider leaves certain bridges or gangways over which it can pass freely whenever it needs to do so. Sometimes, most often, it is in the autumn months we find about gardens masses of loose filmy web which has been carried along by the wind, and has served to convey some of the gossamer spiders through the air. It is not the case, however, as used to be thought, that a gossamer spider can start itself on an excursion by throwing out lines of thread to serve as rafts. The fact is that the breeze, in these species, loosens the web from its moorings, and then, on a portion of it, the spider travels to a new locality.

Of all the spiders of the garden, the best known are those of the genus *Epeira*, proprietors of the large geometric webs which are spread over shrubs or herbaceous plants, and have, at times, the spider occupying the centre, at other periods it lurks under a leaf within easy distance. Feminine individuals of the *Epeiras* seem to predominate, hump-backed, round-bodied creatures, frequently having the abdomen beautifully adorned with spots. Their male companions are less in size, slimmer, and appear to be less ravenous. The number of flies that a single *Epeira* captures in a day is considerable during the season when flies are abundant, and the larger species also succeed in ensnaring saw-flies, butterflies, various moths, and even bees occasionally. It is not an uncommon thing for caterpillars to fall into spiders' webs, and many small ones are killed by them; but we notice there are some kinds which spiders evidently dislike, they just taste their juices and then eject them from the web. A peculiarity of the *Epeiras* is, that once at least, in the course of every day, they repair, or reconstruct their nets, even if they do not seem to be damaged. The diadem spider (*E. diademata*) a conspicuous species, is so called, because, to a fanciful eye, the marks upon its body resemble a crown or diadem, but some have likened them to a cross, and French folks style it the "Croix de St. Denis." It is a spider which has a habit of shaking its web, perhaps to test the cords, and, when it has made a capture, frequently twirls the victim rapidly round, and at the same moment it throws threads about the wings or body to prevent escape. As the diadem spiders like their food fresh they do not always kill their prisoners at once. Now and then the webs of this and other garden spiders occur close to the ground, and these usually contain numerous insects that are troublesome to us, such, for instance, as the crane flies or *Tipulæ*, from the subterranean grubs of which we sustain much loss, even in the flower garden. The egg-bag of the *Epeiras* is about half an inch long, and contains a compact mass of 600 or 700 eggs or more. Even yet there are districts in England where people believe that some of the web of garden spiders rolled up and swallowed will relieve ague.—ENTOMOLOGIST.

### STRAWBERRIES.

A NOTE in the Journal of June 8th, that English Strawberries from early localities were then being sold in the streets of London at 4d. per pound was an indication of the near approach of the height of the Strawberry season. Now is the time, therefore, for a comparison of notes of the relative value of sorts in each of the three sections—the earliest, midseason, and late varieties. In doing this, special prominence should be given to varieties which, like Sir Joseph Paxton, are robust, hardy, and free cropping everywhere, because the general cultivation of such varieties insures a full supply of this wholesome fruit. This may be taken as a safe point of departure in Strawberry culture, and it was precisely this idea which induced me to plant a collection, rather than a choice selection, in the experimental fruit plot of the County Council of Derbyshire. At present the collection consists of nine early sorts:—John Ruskin, Noble, Alpha, Black Prince, Keen's Seedling, Early Prolific, Sir Joseph Paxton, Vicomtesse Hericart de Thury, and King of the Earlies.



Thirteen Midseason.—Bicton Pine, Cockscomb, Duc de Malakoff, Lucas, Pioneer, President, Eliza, Sir Charles Napier, The Countess, Phenomena, Carolina Superba, Marshal MacMahon, and British Queen.

Eight Late Sorts. — Waterloo, Enchantress, Frogmore Late Pine, Hélène Gloede, Jubilee, Elton, Souvenir de Kieff, and Bonny Lass.

It was my intention to include in the collection Laxton's Scarlet Queen, and Competitor, Dr. Hogg, James Veitch, La Grosse Sucrée, and Loxford Hall Seedling, but Messrs. T. Rivers & Son, to whom the order was sent, were sold out of all six varieties, which may fairly be taken as an indication of excellence, of which, as regards the last four, I am competent to speak, as I proved them to be worthy of a place long ago. For size, in combination with flavour, Dr. Hogg takes the foremost place among Strawberries, just as the doctor himself does among pomologists. Marguerite is another Strawberry which I much desired to have, but nurserymen appear to have discarded it, as it does not appear in the leading catalogues. For many years it was the most useful early variety I had, and produced enormous crops of magnificent fruit on the Hastings sand in Sussex, about as ungenial a soil in its crude state for fruit culture as has ever fallen to my lot to bring under cultivation. I am aware that Marguerite is regarded as a delicate variety, but considerable experience of it enables me to say that it answers perfectly under good management in rich soil that is well drained and thoroughly porous. It never failed me but once, and then it was owing to my folly in allowing myself to be persuaded to top-dress instead of forking-in manure immediately after the fruiting season. The soil had been trampled hard as the fruit was gathered, it became saturated with water by heavy rain in October, severe frost followed, and the whole of the plants in a large bed perished. There would have been no such loss had I followed my usual practice of making a clearance of rubbish between the rows, and forking in a heavy dressing of farmyard manure, thus breaking up the hard surface of the soil, so that superfluous rain water was certain to pass through it quickly, leaving the soil comparatively dry.

Here is Dr. Hogg's description of Marguerite in the last edition of the "Fruit Manual":—"Fruit very large, conical; skin bright shining red; flesh bright orange, solid, juicy, sugary, and richly flavoured. It is of immense size, and sometimes weighs as much as 3½ ozs." One may well ask, Is this a Strawberry to discard? Certainly somebody finds it worthy of cultivation, for on June 6th I saw several punnets of it at Solomon's in Covent Garden, marked 2s. a punnet, evidently a special price for fruit of exceptional size, by far the finest in the market. I was able to purchase quite double the quantity of smaller fruit of another sort for 6d. If any reader of the *Journal* can put me in the way of obtaining some runners of Marguerite I shall be much obliged.

The Derbyshire Strawberry bed has only been recently planted, so that a comparison of sorts cannot be made till next season. Meanwhile I invite criticism of my list of varieties, with suggestions of desirable additions thereto. A considerable number of sorts planted in a new private garden I have recently laid out in Leicestershire will also come into bearing next season, and I hope to report results from both counties.—EDWARD LUCKHURST.

[On the day this communication reached us (9th inst.) Strawberries were selling in shops and on costermongers' barrows in London for 2d. a lb. Selected fruits in punnets were priced from 4d. to 1s. a lb., according to quality. Records of experience with Strawberries would be interesting and useful.]

## ROYAL HORTICULTURAL SOCIETY.

JUNE 6TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair), Mr. McLachlan, Dr. Müller, Mr. Wilson, and Rev. G. Henslow, Hon. Sec.

*Clematis*, Double and Single.—Flowers were received of the variety "Proteus," which is remarkable for bearing double flowers on the old wood of the previous year, which are the first to appear, while the present year's wood subsequently bears single blossoms in the autumn.

*Cereus*, Photograph of.—Dr. Masters exhibited a photograph, taken by magnesium light, of a blossom of the Night-flowering *Cereus*, growing at Loughborough.

*Abies balsamea*.—He also showed drawings of this species, exhibiting great variations in the characters of the bracts, scales, colour, &c.

*Cupressus guadeloupensis* and *C. macrocarpa*.—Dr. Masters showed dried specimens of these two forms. The former grows on the island of Guadeloupe, off S. California, and the latter on the mainland on a very limited area. They appear to be only varieties of one another, the island form being more glaucous, a common feature of maritime plants. Dr. Masters also observed that a variety of *Pinus insignis* with two "needles" instead of three, the usual number in this species, together with a Fan Palm, *Erythea edulis*, grew on the same island.

*Calochortus vars.*—Mr. Wilson exhibited blossoms showing great variety of colouring in *C. venustus citrinus* and *C. v. oculatus*. They were grown in open borders at Weybridge and Wisley.

*Aquilegia* and *Clematis Hybrids* (?).—A communication was received from Mr. E. J. Low of Shirenewton, Chepstow, describing some supposed hybrids, accompanied by specimens of *Clematis montana* and a drawing of the "hybrid" *Aquilegia* exhibited at the last meeting. It was the opinion of the Committee that the evidence of its being a true hybrid was not satisfactorily established.

## VIOLAS AND VIOLA CULTURE AND MR. W. DEAN.

THE Rev. David R. Williamson writes to us as follows:—"An exquisite little floral essay on Viola culture has just been published by Messrs. Dobbie & Co., of Rothesay. This gives in condensed form information that is requisite for the culture of the Viola, which, whether as regards its beauty, fragrance, variety of colour, or its marvellous durability is a great acquisition to the modern garden. Among the famous Scottish and English cultivators of the Viola, whose biographies and portraits are given in this instructive and picturesquely written little book are Mr. William Dean, Birmingham; Mr. John Baxter, Daldowie, Perthshire (raiser of the White Duchess and Duchess of Fife); Mr. James Grieve, Edinburgh; Dr. Stuart, Chirnside, Berwickshire; Mr. William Cuthbertson, Rothesay, and Mr. George McLeod of Chingford, the accomplished Secretary of the London Pansy and Violet Society."

[As an old and appreciated contributor to our columns, as a veteran florist than whom none has worked more zealously and disinterestedly in the popularisation of Pansies and Violas, and as the author of the valuable history of the Pansy in Mr. James Simkins' instructive work, "The Pansy," we, by the courtesy of Messrs. Dobbie & Co., insert the portrait of Mr. Dean from their dainty little essay referred to by Mr. Williamson.]



FIG. 86.—MR. WILLIAM DEAN.

## GLOXINIAS AT CHELSEA.

At the Royal Exotic Nursery, Chelsea, is now to be seen at the summit of their beauty a magnificent collection of Gloxinias. Arranged in a low span-roofed house on two flat stages they present a perfect vision of beauty in colours ranging from pure white to a rich deep purple. The compactness and extreme floriferousness of the plants, combined with the charming delicacy of the shades and the wonderful substance of the flowers, create on the mind such an impression as will not quickly pass away. Everyone interested in these plants should see them, and they will be amply repaid for their visit.

What wonderful improvements have been made in the past few years amongst Gloxinias! Now the blooms are short in the tube and broad across the lobes, instead of long and narrow, as they formerly were. The plants at Chelsea are a credit to Messrs. Veitch & Sons, and to their grower, Mr. West. It may be interesting to readers of "our Journal" if a few of the best varieties are named, but all those who have the opportunity of judging for themselves should not fail to grasp it. A worthier variety than Triton, with which I may commence a short selection, cannot be found in any collection. The throat of this flower is light in colour, the lobes, which overlap each other perfectly, being netted with light and dark purple, and having a clearly defined margin of a delightful shade of purple. Cygnet has the throat and lobes pure white margined with purple, which shades at the extreme edges of the flowers to light blue. Monarch is one of the finest. The colour is a rich velvety crimson, and the flower is of the most perfect form. Ruby cannot fail to attract attention, the colour being so soft and pleasing; delicate pink shaded with scarlet can convey but a poor idea of its beauty, for it is one of those flowers which must be seen to be properly appreciated. In Claudia is found still another shade, the ground colour of the lobes being of a unique crimson purple, with a crimson spotted throat and clear blue edges. This variety is remarkably free flowering and of fine habit, each of the flowers having six lobes, and in some seven. Cicely is a bloom having an almost indescribable shade of colouration; dark crimson flushed with purple and having a distinct margin of white will doubtless convey some idea of its beauty. Antigone carries flowers of great substance, the throat and lobes being crimson spotted on a pure white ground, and having a most clearly defined margin of pure white.

Duchess of Connaught has a very light throat, bright scarlet with a pure white margined lobes, and is one of the most striking in the collection. Orestes is of a rich dark velvety crimson colour in the throat and on the lobes, which are edged with a soft pleasing shade of rose. Elvira is one of the most charming. The throat is marbled with red, and the lobes, which are margined with very pale lilac, are purple shaded with bright blue. Sylvia has a white throat, and margins of the lobes are of the purest whiteness surrounding a ground of beautifully soft rose. Sunbeam is undoubtedly one of the most attractive, it having rich scarlet



lobes with a throat of which the ground colour is white but having innumerable bright red spots. Spotted Orion is admirably named; the throat is cream spotted with red and the lobes are white splendidly spotted blue, the broad margin of pure white being very clearly defined. Virginalis is, as its name implies, pure white, and must be counted amongst the best. Claribel is a beautiful flower having pure white throat and lobes, the latter, however, being very slightly spotted red. With Hecla the list must close. It is a pleasing variety, having a white throat densely spotted and feathered, bright red and white margined, velvety red lobes.—H. J. W.



**EVENTS OF THE WEEK.**—The ensuing week will be a busy one amongst horticulturists in the metropolis. On Tuesday, June 20th, the Committees of the Royal Horticultural Society will meet at the Drill Hall, James' Street, S.W., and on that day, and at the same place, the early exhibition of Roses, under the auspices of the National Rose Society, will be held. The annual dinner of the N.R.S. will take place in the evening of the 20th inst. at the Hotel Windsor, Victoria Street, the Very Rev. the Dean of Rochester occupying the chair. A floral fête will be held in the gardens of the Royal Botanic Society, Regent's Park, on Wednesday, June 21st: and on Thursday, June 22nd inst., the annual festival dinner of the Gardeners' Royal Benevolent Institution will take place at the Hôtel Métropole, Baron Schröder presiding.

— **THE WEATHER IN LONDON.**—The weather in the metropolis still continues bright and dry with occasional dull mornings, but no rain. On Sunday and Monday rather cold winds prevailed, but Tuesday was very warm. Wednesday opened similarly, and at the time of going to press the much-needed rain appears to be as far away as ever.

— **WEATHER IN THE NORTH.**—The past two weeks have been warm and fine. No rain has fallen since the 4th inst., when we had some heavy showers. Sunday and Monday were exceptionally warm; the nights, too, have been generally mild with heavy dews.—B. D., *S. Perthshire*.

— **THE DROUGHT IN KENT.**—"J. W. L." writes from Erith:—"Just a few lines to tell you there has now been a drought here for fourteen weeks, and during that time there has only been one hour's rain in all, in paltry showers. Is not that extraordinary? Mangolds are not showing yet, and all fruit trees are very dirty."

— **ROYAL HORTICULTURAL SOCIETY.**—The next meeting of the Society will be held in the Drill Hall, James' Street, Victoria Street, Westminster, on Tuesday, June 20th. Besides the special prizes offered for Pæonies by Messrs. Kelway & Son of Langport, and for lace and border Pinks by Messrs. Turner of Slough, there will also be numerous prizes for competition among members of the National Rose Society. As was announced last week, the National Carnation and Picotee Society's Show, which was to have taken place on July 25th in the Drill Hall, will now be held at Chiswick Gardens on July 11th in conjunction with the Special Show, which has been promoted by the Council of the R.H.S.

— **MR. H. R. WILLIAMS.**—We are pleased to note that Mr. H. R. Williams, who has been twice Master and twice Acting Master of the Fruiterers' Company, has been placed by the Lord Chancellor, on the nomination of the Earl of Strafford, the Lord-Lieutenant, on the Commission of Peace for the County of Middlesex. Mr. Williams is an active supporter of industrial schools, and has taken a leading part in the education of the poor and destitute. In recognition of his service between £300 and £400 were subscribed for presenting him with a service of plate, but this he declined, and requested the investment of the money for a scholarship in the Hornsey Board Schools. Mr. Williams resides at The Priory, Hornsey, taking much interest in his garden and the cultivation of Chrysanthemums. He is a good and just man, and emphatically the right man for the magisterial bench.

— **BEGONIAS AT FOREST HILL.**—These, we are informed, are in exceptionally fine condition in Messrs. Laing & Co.'s establishment. A traveller fresh from a visit to the collection could not resist calling at our office to express his astonishment with what he had seen, and he seemed anxious that editors and reporters, clerks and printers, should have a holiday to see the wonderful flowers that he tried to describe over the counter.

— **NIGHT-BLOOMING CEREUS.**—We had last evening (the 6th inst.) in this garden nine full blooms on one plant of this magnificent Cereus—truly a grand sight. I am given to understand that such a number of blooms is very unusual, if not nearly unprecedented, in English gardens. May I ask that in some future number of the Journal a short note can be given relative to the usual character of the blooming of this most eccentric and beautiful Cactus? The plant promises on the whole nineteen blooms this season.—RICHARD HILTON, *Preston House, Faversham*.—[We will readily publish any notes we may receive on the Night-blooming Cereus.]

— **TESTING THE FERTILITY OF LAND.**—Whatever may be the "cranks" of our cousins (see page 436) on the other side of the Atlantic, I do not think that the principle will "hold water" that "Docks grow only on rich soil." Passing one of the poorest spots I know, which had just been under the steam cultivator, I could not help noticing that it had previously been, practically speaking, a mass of docks and couch grass, and considered too poor for cultivation to pay for the cost.—J. HAM.

— **EARLY PEAS.**—Relative to the remarks on early Peas that have appeared in the *Journal* lately the statistics supplied by Messrs. Hurst and Son of Houndsditch are interesting. These show the early character of the present season as applying to the ripening of the first early Pea crops in their trial ground. The record extends over ten years as follows:—In 1883, June 21st; 1884, June 26th; 1885, June 24th; 1886, June 24th; 1887, June 25th; 1888, June 26th; 1889, June 16th; 1890 is not given, but as it was a hot dry summer the date would probably be the 18th or so; 1891, June 27th; 1892, June 15th, the spring having been dry; 1893, June 4th to 6th at the latest.

— **CAN PLANTS SEE?**—*Apropos* of this interesting question, may I mention a circumstance which occurred here last week? A man was engaged in putting stakes to some rows of Ne Plus Ultra Beans, and went away to his breakfast. On his return he found that the plant nearest to one of the last stakes he had put in had approached the stake and taken a turn round it, although he had been absent about half an hour only. Now it would seem likely that this plant had the power of vision, but how about the others in the same row, and also some rows that had been staked the previous day which had made no apparent advance to the stakes?—SCEPTICUS, *Salisbury*.

— **APPLE PROSPECTS IN DEVON.**—Having had to drive about forty miles last week gave me an opportunity of seeing many orchards, and in some parts, especially in the Exe Valley, I have never seen trees at this time of the year looking so bad. In some large orchards the trees had no leaves upon them, which not only means the loss of this year's crop, but injury for some time to come; in fact, the trees look as if they were dead. I noticed two orchards only divided by a small meadow, where trees in one were looking very well, and in the other very bad. In other parts the trees are looking well; but several owners of orchards tell me that the fruit is dropping fast, owing, no doubt, to the drought.—G. LOCK.

— **BULLFINCHES AND RASPBERRIES.**—The dry weather has made many enemies for the fruit grower in birds which, in ordinary seasons, give no trouble, and in our case this is particularly so with the bullfinch. Generally, bullfinches are associated with the destruction of fruit blossoms in spring, seldom making any further appearance in gardens afterwards; but at the present time we get more frequent visits from them than was the case in winter. Raspberries seem to be their favourite fruit. Chaffinches, tomtits, and other small birds all seem to have a tendency for fruit-eating, brought about, no doubt, by the long-continued drought.—W. STRUGNELL, *Rood Ashton*.

— **THE WAKEFIELD PAXTON SOCIETY.**—At the ordinary meeting of the members of this Society last week an interesting paper on "Plants in Pots" was read by Mr. J. Haigh of Sheffield. The paper was so much appreciated that the essayist received a pressing invitation to pay another visit to the Paxton Society, and to continue the subject. Mr. Haigh recommended amateur gardeners to study the nature and habitat of plants, and to treat them accordingly. He explained the best kind of compost and pots to be used for plants in pots; he strongly recommended good drainage with crocks, a little detail of much importance which is frequently overlooked, and he remarked that a plant requires water when, on the pot being tapped with the knuckles, it gives a ringing instead of a dull or heavy sound. Mr. Hudson of the Woolley Park Gardens had a fine display of blooms of Rhododendrons and Pansies.



— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are informed that the fifty-fourth anniversary festival dinner will be held at the Hôtel Métropole, on Thursday, June 22nd, 1893. Baron Schröder will preside, and a large and influential gathering is anticipated.

— GARDENING APPOINTMENT.—Mr. William Robert Coulson, for six and a half years general foreman in the gardens of John Crossfield, Esq., Walton Lea, Warrington, has been appointed head gardener to Joseph Verden, Esq., The Brockhurst, Northwich, Cheshire.

— A CENTENARIAN GARDENER.—As a rule gardeners live a long life, but comparatively few reach the age of Mr. John Cuckow, of Lenham, who, according to a Kentish contemporary, is now in his 102nd year, and still in possession of his faculties. Mr. Cuckow stated that this year he had cultivated the whole of his garden, which is about 9 perches in extent.

— LILIES AT WALTHAM.—Your printer has a good joke in my article on page 463, at the expense of Mr. Paul. He makes me say that Japanese Lilies are not cultivated at Waltham, inasmuch as they cannot find in that region "a congenial soul." The venerable rosarian will enjoy this immensely.—DAVID R. WILLIAMSON. [Printers will have their little jokes when they can, and say the best of the joke in this case is that the writer wrote "soul," and not "soil," as he perhaps intended.]

— THE LONDON PANSY SHOW.—In your report of the London Pansy and Violet Show of June 6th, at the end of your remarks on the trade exhibit of Violas and Pansies you add, "Messrs. Dicksons & Co., Waterloo Place, Edinburgh, competed in this class." We request you to correct this in your next issue, as we did not compete in any class, and merely sent a stand for exhibition.—DICKSONS & CO., *Edinburgh*. [We readily insert the correction. Our reporter did not observe any card on the stand indicative of its not being in competition.]

— GRAFTING IN SUMMER.—It is not generally known, but "Meehans' Monthly" says "that the longer scions can be retarded the more certainty there is of success. For instance, if grafts of Pear are cut in the winter, and put in the ground like cuttings, they will keep green without sprouting for months. The Pear tree to be grafted may push into leaf in May, but the grafting may not be done till June or later. The unsprouted cuttings used as grafts grow with surprising success. The writer has known some of these to be successfully grafted even at the end of July."

— CHRYSANTHEMUMS IN JUNE.—I send you a few blooms of Chrysanthemum Elsie, cut on June 5th, from a plant that came into flower early in November, and has flowered continuously ever since. Over 100 blooms equal to those sent were cut during April and May, quite as many in March, and the plant shows no sign of being exhausted yet. This I consider one of the best decorative varieties, and certainly an acquisition to a not too numerous section. I grow this variety without disbudding, as I do not think it nearly so good as when grown in a natural way.—P. S. [Truly a floriferous plant. The blooms were as good as we usually see them in November.]

— STRATAGEM PEA.—Mr. W. Strugnell, Rood Ashton, writes:—As a second early Stratagem is a fine Pea. We gathered some pods, June 1st, from plants raised in boxes the end of January. It is possible, considering the abnormally dry and warm spring, these would have been almost as forward sown outdoors, because of the check given them in planting out from the boxes for want of rain. They had an additional check, too, in a rather sharp frost in the evening following the planting, although protected by Yew branches inserted thickly among the rows. American Wonder sown and planted on the same dates on the same border was a little more than a fortnight earlier.

— HORTICULTURAL CLUB.—On Tuesday, June 6th, after the usual monthly dinner of the members, Mr. Chas. T. Druery, F.L.S., gave a very interesting lecture entitled "Round my Fernery," which he illustrated by a photograph embracing a considerable number of the finest forms of British Ferns as grouped in his fernery, and by a collection of freshly cut fronds from the most striking specimens. By means of these he demonstrated not merely the present great decorative value of these native plants, but also the practicability of enhancing their attractiveness by crossing, some very charming combinations being shown together with the parent forms. He also exhibited a series of graduated forms obtained by selective culture alone without crossing, and culminating in some of the finest plumose and crested forms existing. An interesting discussion followed, in which Sir J. D. T. Llewelyn, Bart., Mr. John Lee, and Mr. Cousens took part. Mr. J. S. Cousens exhibiting also a number of fronds of good varieties.

— THE ROSE ACACIA IN AMERICA.—It seems curious, says a correspondent, that the Rose Acacia (*Robinia hispida*), one of the most beautiful of flowering trees, will not flourish in America. It is said to have nearly disappeared from cultivation through the ravages of the locust borer.

— KALMIA ANGUSTIFOLIA ROSEA.—This plant is now flowering at Kew. It forms a neat low-growing bush, and produces medium-sized trusses of bright rose-coloured flowers in great profusion, which contrast beautifully with the light green shade of the young foliage.—A.

— ERICA CINEREA.—Where Heaths can be successfully cultivated this beautiful species and its varieties should be given a prominent position. At Kew it is now in full flower, the colour ranging in the many varieties from pure white in *E. c. alba*, to rich purple in *E. c. atro-purpurea*, and deep rose in *E. c. rosea*. Large patches of these varieties, grown on rockwork or the sides of hills, form a most attractive feature.—A.

— STEPHANOTIS FRUITS.—I send a double seed pod of *Stephanotis floribunda*. I have many times had one pod, but never had two on one stem before, and should like to know if any of your readers have seen the fruits in pairs.—G. LOCK. [The fruits are each 5 inches long, and  $6\frac{1}{2}$  inches in circumference, end to end like a pair of horns with the points outwards. We have seen similar examples, but very infrequently.]

— ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of this Society at 25, Great George Street, Westminster, on Wednesday, the 21st instant, at 7 P.M., the following papers will be read:—"Fifteen Years' Fog in the British Islands, 1876-1890," by Robert H. Scott, M.A., F.R.S.; "Upper Currents of Air over the Arabian Sea," by W. L. Dallas, F.R.Met.Soc. Mr. E. D. Archibald, M.A., F.R.Met.Soc., will also give an address on "Australian Climate and Weather," which will be illustrated by a number of lantern slides.

— HEDYSARUM MULTIJUGUM.—This is one of the most attractive of the rarer leguminous plants at present in flower at Kew. Growing about 18 inches high, it is admirably suited for a front position in the shrubbery, whilst it is equally valuable for the herbaceous border or for permanent beds on the lawn. The flowers are of a rich rosy purple, and are borne on racemes ranging from 9 inches to 1 foot in length, which are produced with the greatest freedom during the early summer. A rich, light loam is best suited for the successful cultivation of this charming plant.—A.

— THE ODOURS OF FLOWERS.—In one of his addresses on the odours of flowers, Mr. Meehan called attention to the fact that out of the 100,000 flowering plants known to botanists, possibly not 10 per cent. of them had any odour. The large majority of plants are in fact scentless. Among other points he called attention to the remarkable circumstance that in many large families there were only one or two sweet species; for instance, in the Mignonette family, of fifty species known, only the one in our gardens was sweet. Among 100 of Violets there are not a dozen sweet ones. In many other large families also, Begonia for instance, the scentless ones are as a hundred to one. Among our wild flowers the number of sweet-smelling flowers is very slim.

— WHAT BECOMES OF THE APHIS IN THE WINTER?—Referring to this question from *Nature*, on page 436, Mr. T. A. Sharpe does not say what species of aphis is referred to. In my researches for aphides in winter I have no difficulty in finding specimens of the Plum aphis in a young producing condition on the Plum bloom buds from January onward if the weather is mild. These I have shown in connection with the lectures under the microscope constantly, and advised fruit growers to take precautions by destroying with washes the mothers of millions in future generations during the coming seasons. Those who took the advice, and acted upon it in a practical form, have had excellent results. The great difficulty I find to contend against is the fixed idea that they come in the "east winds" in spring, and no amount of argument and ocular demonstrations will ever have any effect on some persons, and the only way that I see is to teach the young either with the aid of microscopes with specimens in different stages of growth and destructiveness, or with lantern slides with specimens from *Nature*. The Apple aphis does not appear to be produced in spring from hibernating viviparous mothers, as the Plum aphis, but from jet (bright black) eggs, which are not so easy to deal with, for as soon as they hatch out they retire within the tender foliage and become viviparous mothers in a short time, producing young at an incredible rate, curling up the foliage and sheltering from insecticides.—J. HAM.



— **VIOLA SPORTS.**—Mr. G. McLeod of Chingford has sent us a bloom of *Viola Duchess of Fife* with two distinct sports from the same plant. The flower of one sport is large, of good substance, and very attractive. The top petals are bright violet, the lower one being brownish yellow with a bluish margin and clear orange centre. This sport, we understand, is appearing on *Viola Duchess of Fife* in several parts of the country. The other, however, is the most distinct, and, so far as can be ascertained, has not appeared elsewhere. The flower is well formed and very pretty. A dark mauve colour characterises the top petal, this forming a pleasing contrast to the rich yellow centre, from which the lower petals gradually shade to a buff tint and well-defined heliotrope margin. It is very distinct, and if Mr. McLeod can "fix" it, there is no doubt it will become a popular variety.

— **STEAM *versus* HOT-WATER HEATING.**—The Americans obviously regard the British horticulturist as being behind the times in the matter of heating. Says "Meehans' Monthly," "Judging by the horticultural literature of the old world there seems to be a doubt whether steam heating can be made a great success, hot water being in general use there. The dread seems to be that steam requires much more personal attention than hot water. But American invention has so simplified things that it really requires little, if any more labour, to look after the houses, or a large series of houses heated by steam than when heated by hot water, while the advantage of carrying heat to long distances very rapidly are so much in favour of steam, that instead of its being a question with us as to whether steam or hot water is the best, hot water is really going out of existence."

— **ROYAL BOTANIC SOCIETY.**—Professor S. H. Vines of Oxford University gave his concluding lecture upon "The Leaf and its Functions" at the Gardens, Regent's Park, on Friday last. In defining transpiration as the power possessed by leaves of giving off watery vapour, the lecturer referred to the enormous quantity of moisture drawn by the roots from the soil, and by this means discharged into the atmosphere. For example, the common Sunflower was found to exhale 12 ozs. of water in twelve hours, and an Oak tree, with an estimated number of 700,000 leaves, would in the same way give off something like 700 tons of water during the five months it carries its foliage. While the other parts of plants varied but little, leaves, as befitted the most important organs, were able to alter themselves to suit the conditions under which they had to live, so that botanists were often able by the appearance of a plant to tell the climate and circumstances under which it had been grown.

— **TWO-OUNCE STRAWBERRIES.**—Fruits weighing 2 ozs. and upwards are not commonly obtained from plants grown in pots, although such records are occasionally given. Mention was made a short time since of Mr. Robinson's success with President Strawberry in pots at Heywood, Westbury, and since that date a crop of that fine variety *Auguste Nicaise* has proved even more remarkable than President. Several pounds could be gathered at one time, and out of these there were many Strawberries that weighed 2 ozs. each, and some almost 2½ ozs. Those accustomed to fruits of 1 oz. weight can readily imagine what a fine show these must have made both on the pots and dinner-table, and it is the more remarkable when the whole of the crop of nine fruits on each pot were of corresponding size. They were bright in colour, which is not a condition always presented in fruits of this variety grown in pots. A sunk pit is filled with Strawberries in pots in the spring, and the ventilation, in conjunction with fire heat, ensures a perfect set, hence the full size attained in the crops. A little air is left on all night, which keeps the atmosphere cool and dry, and prevents moisture settling on the flowers.—W. S.

— **THE ROYAL HORTICULTURAL SOCIETY'S FOUR DAYS' AUTUMN SHOW.**—A "Fruit Grower and Exhibitor" writes:—"As a Fellow and well-wisher of the Royal Horticultural Society, and as one who for several years past has been a large exhibitor in the fruit classes of the metropolitan, Crystal Palace, and provincial Shows, I venture to say that four days are too long to have hothouse and other choice fruits on view in an exhibition hall, inasmuch as a large per-centage of such fruits would be practically spoiled by the end of the Show. Under these circumstances I believe exhibitors who have enjoyed the privilege of showing specimens of their productions at the Shows indicated, will, bearing in mind their employers' interests, not compete at the Great Show to be held in the Agricultural Hall on August 29th and three following days; unless, while there is yet time, the Council of the Royal Horticultural Society give, through the medium of the horticultural press, a guarantee that exhibitors in the fruit classes at the Show in question may remove their exhibits at six o'clock on the evening of the

second day of the Exhibition. By complying with this very reasonable suggestion the Royal Horticultural Society would be serving its own interests, as well as showing that it was not unmindful of those of the nobility and gentry who annually support horticulture, not only with their subscriptions but also by allowing the produce of their gardens being staged at the leading horticultural shows, and a good display of fruit would result therefrom."

— **DISEASE IN CARNATIONS.**—During the past year or two a very troublesome fungus disease of a rust has appeared among winter blooming Carnations to the dismay of florists in America, cutting down the product of plants nearly one-half. It has been discovered, remarks "Meehans' Monthly," that this species of fungus belongs to the genus *Uromyces*, and on account of its affinity for the Carnation has been named *Uromyces caryophyllinus*. Like so many of these it easily gives away to the copper sulphates. Prof. Arthur says that the sulphates of iron, or green copperas, have been found to be generally as effectual as the sulphate of copper, or blue copperas. He says that there is already prepared in the drug stores a mixture known as copperdine, which is ammoniated copper carbonate. This ready preparation may be of great service to those who have not the time or disposition to make a mixture for themselves.



#### ROSE SHOW FIXTURES IN 1893.

- June 20th (Tuesday).—Westminster (N.R.S.).  
 " 21st (Wednesday).—Dursley.  
 " 24th (Saturday).—Reigate.  
 " 26th (Monday).—Hitchin and Canterbury.  
 " 27th (Tuesday).—Maidstone and Sutton.  
 " 28th (Wednesday).—Clifton,\* Earl's Court, King's Lynn, and Richmond (Surrey).  
 " 29th (Thursday).—Eltham and Windsor.  
 July 1st (Saturday).—Crystal Palace (N.R.S.).  
 " 4th (Tuesday).—Bagshot, Diss, and Gloucester.  
 " 5th (Wednesday).—Croydon, Ealing, Farnham, Hereford, and Lee.\*  
 " 6th (Thursday).—Bath, Farningham, Manchester, and Norwich.  
 " 7th (Friday).—Ulverston.  
 " 11th (Tuesday).—Harleston and Wolverhampton.†  
 " 12th (Wednesday).—Earl's Court and Tunbridge Wells.  
 " 13th (Thursday).—Worksop (N.R.S.), and Woodbridge.  
 " 14th (Friday).—Helensburgh.  
 " 15th (Saturday).—New Brighton.  
 " 20th (Thursday).—Bedford and Trentham.  
 " 25th (Tuesday).—Tibshelf.  
 " 27th (Thursday).—Halifax and Southwell.  
 " 29th (Saturday).—Bedale.

\* Shows lasting two days.

† Show lasting three days.

During the present month a list of Rose Show fixtures will be issued each week, so that I shall be glad to have early notice of the dates of any shows not mentioned above, and also of any change of dates.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

#### CANTERBURY ROSE SHOW.

We are requested to say that this Show is put forward to Monday June 26th, on account of the earliness of the season, instead of July 4th as previously announced.

#### "THE WORM I' THE BUD" IN 1893.

"W. R. Raillem" (page 455) is quite right in supposing that I have not gathered so many grubs and caterpillars this year from my Roses as usual. Taking the same 1000 plants they fell short of the average crop in the previous five years by about 600, and were fewer than in any of those five years.—E. M., *Berkhamstead.*

#### CRIMSON RAMBLER ROSE.

We are informed that at the Exhibition of the National Horticultural Society of France, held recently, a gold medal was awarded to Mr. Charles Turner, Royal Nursery, Slough, for his Japanese Polyantha Rose, *Crimson Rambler*. The plant was packed in an ordinary matted basket, and forwarded by rail to M. Margottin fils of Pierrefille, and when unpacked it was found not a flower or petal had dropped, showing its persistence and its adaptability for sending long journeys. A brief description of this grand Rose was published in the *Journal of Horticulture* for May 25th.

#### THE DUCHESS OF BEDFORD ROSE.

The raiser of the *Duchess of Bedford* Rose was Mr. Richard Broadhurst Postans, and not, as stated by Mr. Williamson in your last issue (page 463) Mr. William Paul, although the latter may have assisted to introduce the Rose to the public. Mr. Postans was an enthusiastic



amateur who not only grew, but also raised several valuable Roses in the years 1878 to 1881. In 1879 he raised two out of the five new Hybrid Perpetual Roses of that year—viz., Duchess of Bedford and Countess of Rosebery. Lady Sheffield and May Quennell were also raised by him.—HARCOURT P. LANDON.

#### ORANGE FUNGUS ON ROSES.

WHEN all are singing the glories of the Rose it may seem unpleasant to call attention to one of its most malignant and besetting diseases. It is, nevertheless, an old and approved practice at seasons of enjoyment to introduce mementoes of the final destiny to which all must succumb. Disease is by no means a welcome topic, but it is well to remember that the beautiful has to contend with foes which seek to bring it down to

perfectly healthy and showing flower buds. Here was the contrast—wood lean, impoverished by the leaves in the preceding year being preyed upon by the orange fungus; wood stout, well nourished by clean healthy leaves the year before.

In fig. 87 at A is shown a bud of the Dog Rose (*Rosa canina*) attacked by orange fungus or "rust" (*Lecythea Rosæ*). It was sketched on May 1st, 1893. When gently tapped on the table the spores were shed as at *a*. On May 8th, 1893, a bud, similar to A on May 1st, had attained the condition shown at B, and the slightest tap of the end of the shoot on the table caused the spores to be liberated as at *b*.

To show the spread of the fungus another infested bud and growth from it was selected on May 8th, 1893. It will be noticed that the fungus has attacked the young wood as indicated by the "black" in the



FIG. 87.—ORANGE FUNGUS ON THE DOG ROSE.

a commonplace level. Instead, therefore, of the subject now being broached having a depressing effect it cannot do otherwise than good.

Where does the orange fungus come from? That question was asked over thirty years ago, and it has remained practically unanswered. But I set myself the task to find out the facts. "Rummaging among the mysteries," looking into every corner and tumbling over things, only revealed the fact that orange fungus was found on Rose leaves. The authorities were unanimous as to its being a native, therefore it would be found on some indigenous species of the Rose. With the knowledge gained from such authorities as the late Rev. M. J. Berkeley and Dr. Cooke, I looked for the orange fungus in Nature—scanned every wild Rose bush I came across, and found a complete answer to the question, "Where does orange fungus [on cultivated Roses] come from?"

On a high and dry bank, about a mile distant from St. Alban's Abbey, I found growing, in a gravelly loam, a bush, about 8 feet high, of the Dog Rose (*Rosa canina*), with a number of the orange-coloured buds. The parts of the bush on which these conspicuous orange-coloured buds grew were much smaller and weaker than the other parts, which were

engraving C and the growth distorted in the bud, whilst the shoot inclines towards the weakness, and instead of taking an upward—a resistive—grows in a downward non-resistive direction. The fact is it has capitulated to the enemy, for the fungus cannot find a lodgment for its spores on the smooth upper surface of the leaves, nor gain access to the internal tissues upon which it lives on that side unless the conditions are exceptionally favourable. It will also further be observed that when such shoot is held upright and its end lightly tapped on a table that the spores do not fly upwards, but follow Nature's undeviating law of gravity, and descend as shown at *c*, for they cannot float in still and dry air. Sometimes the fungus entirely encircles the attacked shoot, then it suddenly collapses; it has gone off without cause or reason, and the leaves will be found very pale in colour and extremely thin in texture; but this does not always happen, for the wood becomes too firm, and the callus thrown out on the part of the Rose bars the further progress of the fungus. The result is an ungainly scar, and is termed canker.

The bud affection must have been common in Shakespeare's time, for he frequently alludes to cankerous buds, and they are easily found if



examined, but most are due to the burrowings of larvæ, about which we are not at present concerned, therefore my remarks will be confined to the fungus. This first appears in the buds of the common Dog Rose, so much employed for standard Roses, but I do not consider it has been introduced into gardens in that way, for the stocks are merely sticks with dormant buds, and few if any are attacked by the fungus in nursery rows. It is worthy of note that the bud form of the fungus does not produce the mature form; at least, I have not found any, and the fungus has disappeared from the bud or shoot by the time the "brand" is well developed in the leaves, nothing remaining but the cankerous hollow scooped out by the fungus; in fact, it becomes a receptacle or "run" for water, and it is then all "up" with the spores of the *Lecythea Rosæ*, as they must in warmth and moisture do or die.

We have seen how the spores are scattered, also that the fungus distorts and causes the growth to grow downwards, and this acts as a rest for the spores, the under sides of some leaves being semi-upwards, and strive as the Rose may it cannot reverse them in a moment, for it is a work of time, and by when the leaves are turned face upward—that is, the right way—one or more of the invisible (to the naked eye) particles of dust has pushed its or their germ tube or tubes and entered through the stomata into the interior of the leaf or leaflets. The turning upwards of such leaves only aids the fungus by elaborating the substance upon which it exists, and is essential to the reproduction of the species. In the bud that substance is the cambium; in the leaves it is the chlorophyll. After a time the leaves assume a sickly jaundiced hue, and brownish spots appear on the upper surface, as shown in the engraving at D. But the marks are not remarkably conspicuous on the upper surface of the leaves; yet the brown patches and the jaundiced hue, which overspreads so much of the leaf surface has as been penetrated by the mycelium of the fungus, are a clear indication of trouble from orange fungus. This must be sought for on the under surface of the affected leaves, where will be found little masses of a brilliant golden yellow or orange colour. These masses consist of spores—the succeeding generation from the bodies, at one time present in the buds, which have been scattered far and wide by the wind, and have found a suitable host—one affording them the elements needful for germination, development, and reproduction—a healthy, vigorous, and hitherto a flourishing Rose tree.

This form is the orange fungus or "rust," and being scattered by the wind or otherwise falling on Rose leaves, and finding a fitting nidus they reproduce the fungus (*Lecythea Rosæ*). If the golden yellow masses on the leaves are examined carefully there will be found amongst the orange-coloured dust several little deep brown specks, which under the microscope appear as at E, and this form is termed the "brand." Had the fungus been examined at an earlier stage by the aid of the microscope it would have been found that the orange-coloured cells (spores) and the barren cysts (abortive cells) were supported together on slender stems and in clusters. If the golden-yellow dust be examined with a lens it will be found to consist of myriads of semi-globular cells, mixed with a less number of colourless cells of slightly different shape, and concatenate (chained together), as at F. The orange powder is conspicuous: it consists of the summer spores called "rust," the deep brown specks are the winter or resting spores, termed the "brand." With the aid of a microscope of higher power the latter will be found to consist of sausage-shaped bodies, standing on colourless slender stems as long or longer than themselves. Each of these deep brown bodies is several times contracted, as though it had been tightly bound with slender cords, and the surface has been studded with minute glassy warts. The general appearance of the "brand," highly magnified, is represented at G. Each "brand" consists of six to eight-celled spores. In this stage the fungus is known scientifically as *Phragmidium* (*Aregma*) *mucronatum*, *Fr.*, or *P. subcorticium*, *Schr.*

The autumn having arrived the leaves fall; the Rose is considered as safe from attack as the fungus is against cold and wet. But the Rose has some of its twigs broken by wind, nipped by cattle, or cut off, and the consequence is some of the buds are started into growth—it may only be a little, as shown at H, yet it is enough to admit one or more of the cylindrical multiseptate spores of the *Phragmidium* at I. Whether it set to work then or later it amounts to the same thing—that bud will assuredly produce the condition shown at A, B, and C in the early part of the following summer. The "brand" spores may, in some cases, pass the winter in their frostproof and watertight coats, and in spring separate and float in the air like balloons. But it is better to take preventive measures against the recurrence of the fungus where there has been an attack than to speculate in microscopic probabilities, for one thing is certain—namely, many of the winter or "resting" spores find billets on the Rose trees and abide there ready to germinate and push their mycelium into the stoutest Dog Rose or the most fair and beautiful Rose of the garden. It is only a question of spores and a fitting soil. The spores cannot enter a closely sealed bud, as at I, nor can they make an impression on smooth, clean, elastic bark. A vigorous growth from a similar bud to I, taken from the same bush, as A, B, and C is shown at J, all from living specimens, and natural size, except E, F, and G, which are highly magnified representations.

The only remedy is to kill the spores. All the arts of cultivation will not avail one jot against the fungus. It is an excellent practice to remove all the fallen leaves in autumn and burn them, also to not shorten the shoots in autumn so as to start the basal buds *etc.*, but leave enough wood above the pruning buds, so that any growth taking place may be on that part, and if any spores are billeted there they will be removed with it at the usual pruning time. Instead of Roses

being pruned early, as formerly, they are now pruned late, which accounts for the decreased infection of Roses in gardens by the orange fungus, and when it does appear it is generally on the leaves. We have seen where the spores that produce it come from, and those that wish to avoid its attacks must scan the Dog Roses in the immediate locality, and nip the disease in the bud (A), which contains, according to calculation on the microscopic scale, more spores than there are cultivated Roses in the county of Hertfordshire.

Another excellent practice is to bury the diseased leaves, or if the leaves are cleared away and burned dig the ground, so as to bury the resting spores after sprinkling a little sulphate of iron evenly on the ground, say a quarter of an ounce per square yard. I am assured that this is a good manure for Roses in soils deficient of iron, and most parasitic animals and vegetables hate sulphur.

These, however, are empirical, and the conclusions or deductions drawn from the supposed effects mere fancies or delusions; therefore, we will combat the fungus. 1, Spray the bushes whilst the pruning buds are quite dormant with sulphate of copper, according to the formula hereafter given, for simple sulphate of copper solutions must be used with great care on plants liable to attacks of "rust" and "brand" as the Raspberry and the Rose. 2, Spray the trees when they are in bud, and before the flower buds appear clear off the leaves with copper sulphate, 4 ozs., fresh burned lime unslaked 4 ozs., water 7½ gallons. Dissolve the sulphate of copper in one vessel and slake the lime in another, forming the lime into a thin whitewash, and then pour it slowly through a hair sieve into the copper solution. Dilute to 15 gallons for this early spraying, for the foliage is as yet tender, and remember that every part of the plants, especially the under side of the leaves, must be coated with the finest possible film. 3, When the first crop of flowers are all gathered or blown spray the trees with the mixture at full strength, and it may safely be concluded that the Roses are orange fungus proof. If the fungus gain access to the tissues of the leaves the spraying may need to be repeated, but do not give an overdose.—G. ABBEY.

## FRUIT PROSPECTS AROUND LIVERPOOL AND IN CHESHIRE.

BLACKLOW HOUSE, ROBY.

APPLES form a good average crop here, the best being Irish Peach, Mank's Codlin, Ecklinville, Hawthornden, Bedfordshire Foundling, Lord Suffield, Lord Derby, Blenheim Pippin, Betty Geeson, Brabant Bellefleur, Nelson's Glory, Flanders Pippin, an admirable Apple, and one which never fails; Ribston, and Golden Noble. There is a very moderate crop of Pears. Doyenné du Comice, Pitmaston Duchess, Beurré Clairgeau, Beurré d'Amanlis, Beurré Diel, Beurré Capiaumont, and Beurré Bosc, Fondante d'Automne, Citron des Carmes, Jargonelle, Grosse Callebasse, and Glou Morceau are the best. Cherries are nearly a failure. Gooseberries, the heaviest crop known for years, and not the slightest trace of the caterpillar. Plums, with exception of Victoria and Orleans, are a complete failure. Strawberries, a fine crop, fully a month earlier than last year, having already gathered Duc de Malakoff, Keen's Seedling, and Black Prince outdoors. Black and Red Currants made a grand start, the former being now nearly *nil*, but the latter very plentiful. Raspberries are carrying an enormous crop, but we have to keep them plentifully supplied with water or the crop would be lost. With regard to Pears I may say that many have succumbed to the attacks of the weevil, which this year seems to have been a great plague.

COURT HEX, BROADGREEN.

Here the fruit crops are more promising this year than last, but everything is suffering from want of rain. All varieties of Apples are good. Pears an average crop; Jargonelle, Beurré Diel, Beurré Clairgeau, Durondeau, and Marie Louise are good on walls; and Williams' Bon Chrétien, Louise Bonne of Jersey, and Marie Louise on dwarf trees. Gooseberries and Red Currants are a full crop, Strawberries promise well, Cherries on walls a failure owing to the dry season.

ENDFIELD HOUSE, AIGBURTH.

Apples are extraordinarily good. Of Pears Mr. Kelly has a fair crop, Jargonelle, Pitmaston Duchess, Marie Louise, Beurré Clairgeau, Beurré Diel, Beurré Bosc, Autumn Bergamot, and Winter Neli being the best; Glou Morceau, Brown Beurré, Gansel's Bergamot, Doyenné du Comice, and others are complete failures. Plums form the heaviest crop for many years, noticeable being Green Gage, Prince Albert, Queen Victoria, Kirke's, and Coe's Golden Drop. Cherries seldom do well with the exception of Morellos. Gooseberries, Red and White Currants are exceptionally good, whilst Strawberries are abundant, but, like all others, suffering from excessive drought. The four latter are almost a month earlier, Black Prince Improved and Noble having been gathered, and Duc de Malakoff colouring fast.

CALDERSTONES, AIGBURTH.

Mr. Tunnington considers all outdoor crops fairly good, Peaches and Nectarines, which are always done so well here, being especially fine. Apples are, in nearly all cases, good. Pears not so heavy, only about half a crop. Plums and Damsons are very poor, whilst Apricots are carrying fair crops. Black and White Currants and Raspberries form a full crop, and Strawberries are excellent. Rain is badly wanted, watering and mulching having had to be resorted to to save the crops.



## RAINFORD HALL, ST. HELEN'S.

Here the fruit is looking fairly well. Gooseberries, Currants, Cherries, Plums, and Apples are all carrying heavy crops. Pears are very fair, and Strawberries first-rate. They have had to be watered or they would not have been so good. All kinds of crops are very early, but badly wanting rain.

## CHRISTLETON RECTORY, NEAR CHESTER.

This is a notable garden for outdoor fruit culture, and where the Rev. L. Garnett exhibits he is always in the first rank. I was informed that Apples generally are good and promising well. Pears are only moderate. Stone fruits generally are very good. Peaches and Apricots are excellent; Cherries, Damsons, and Plums a full crop, the latter being, however, much infested with insects. Strawberries are suffering a little from drought, but form a good crop. Plenty Raspberries and Gooseberries are good, but the latter have been troubled with the caterpillar. Currants thin, though at first there was a good promise. On the whole the prospect is considerably above the average.

## HOOTON HALL.

Mr. Hanagan has what he considers the best all-round crop of fruit that he has had for the last twenty years. Apples, heavy crops; Pears, most varieties plentiful; Plums, moderate; Apricots, good; Cherries, heavy; Strawberries, very good. Peaches and Nectarines not much grown here. Gooseberries, Currants all heavily laden. Of Cob and Filbert Nuts very few. Here as elsewhere all fruit trees and bushes are badly in want of rain.—R. P. R.

## ABOUT HULL.

## TRANBY CROFT.

HULL, city of docks and dockers; huge artery of commerce of which the corpuses assume all shapes and forms, from Norway fir to Dutch margarine, from thrashing engines to crockery, is remarkable for many things, but not for flowers. Where in this huge conglomeration of docks and streets, in which towering spars and lofty chimneys vie with each other for superiority of altitude, one can taste the pleasures of a shower bath in the superfluous water from an overhead window sill, I cannot, despite assiduous search, proclaim. There is water enough to be sure, fresh and salt, clean and dirty; but of plants to enjoy it there are too few to redeem the character of the old town for dullness. Taking the place as a whole, one looks in vain for trim front gardens, creeper-covered walls, or flower-furnished windows. Perhaps the tastes of the average inhabitant are somewhat too robust for such delicacies; but if we wander forth a few miles from the city, in the gardens attached to the homes of the great men of Hull, we find much of the material which goes to build up the fine shows held in the dock town in autumn.

It is easy to arrange a pleasant round. My own limited knowledge of the locality was expanded by some acceptable hints from one who is held in high esteem at Hull, horticulturally and otherwise—Mr. R. Falconer Jameson, but whose energetic spirit was then tamed, unfortunately, by a severe illness. Those who have no such guide will be likely enough to find their thoughts passing from such of the eighty-six magnificent Wilson steamers as are to be found in the docks to the Wilson residences, and so by a natural transition it will not be surprising if the next objects of admiration are the houses and gardens of Tranby Croft. This beautiful demesne, the property of Arthur Wilson, Esq., is about five miles from Hull, and as two or more out of the five may be covered by tram, and the remainder is a very pleasant highway, it is by no means unwise to go by road. But Hessle station is only two miles away, and an agreeable day may be spent by visiting Hesslewood and Swanland Manor as well as Tranby Croft. The three places, about all of which I propose to say a little, are within comfortable walking distance of each other, and all are thoroughly worthy of a call.

The white walls and square towers of Tranby form an admirable guide, seen as they are through the trees. They serve the same purpose as the lofty Wilberforce monument in Hull town, which focuses the ends of the principal thoroughfares in itself, so to say, and is therefore a good landmark. A handsome lodge and a long avenue of Conifers interspersed with shrubs mark the entrance to the Croft. Near the lodge some flower beds were being filled, and superintending the work stood an upright, keen-looking man whom I rightly took for the head gardener, Mr. J. P. Leadbetter. The fact of our not having previously met did not detract from the warmth of his welcome. One may almost say that Yorkshire is pleasant if only for its welcomes. A stranger is not greeted with finicking hesitation, but with quite an abandonment of heartiness. If there are two or three to do the welcoming each seems as though he would like to carry off a slice if he cannot have all the spoil. In this case there was only one, and embarrassment was saved. I am not going to attempt any description of Tranby Croft from an architectural point of view, for, sooth to say, its beautiful setting of Conifers, shrubs, and flowers proved so attractive as to monopolise all notice. The pleasure grounds are indeed delightful. The beds in front of the house were just filled. One of scarlet Begonias, with *Gnaphalium lanatum* to cover the ground, will be beautiful when completely furnished, and so will others composed of *Pelargonium Chelsea Gem* and *Iresine*, *Pelargonium Manglesi* and *Ageratum*, Begonias and variegated *Dactylis* respectively. Near them there were two magnificent banks of *Rhododendrons*, and the lawns are broken by many objects of interest, such as fine plants of *Abies Parryana glauca*, of splendid habit and colour; a grand *Cedrus*

*Deodara robusta*, a fine *Taxodium sempervirens*, *Abies concolor*, and beautiful arches of Honeysuckles and Roses.

Most visitors are likely to feel special admiration for a Conifer-lined walk that is a favourite promenade of Mr. Wilson. Some perfect plants of *Cupressus Lawsoniana*, 30 feet high; *C. L. erecta viridis*, 10 feet high and of faultless shape; *Cryptomeria elegans*, *Thuja borealis*, and *Abies Douglasi* will be particularly noted. Huge shrubs of white Broom laden with blossom were amongst them. But a glimpse of the Palm house should be taken before seeking other parts of the grounds. The amount of furnishing carried on is enormous, and superb plants of *Kentia Belmoreana* (16 feet high), *K. Fosteriana*, and *K. Canterburyana* do good service. There is also a gigantic specimen of *Phormium tenax variegata* 12 feet high, a fine *Cycas revoluta*, and other good plants. The fernery contains some beautiful objects. There is a grand plant of *Acrophorus emersii*, 5 to 6 feet through; a splendid *Adiantum concinnum latum*, 4 feet through; *Microlepia hirta cristata*, nearly 7 feet across; and noteworthy specimens of *Davallia Mooreana*. Some of these Fern giants have worthily represented Tranby Croft at many exhibitions, and are likely to make their quality felt in the future. *Asparagus deflexus* is excellently grown, and proves very valuable. There are many admirable Crotons, *angustifolius* and *Weismanni* being two of the best of a clean and healthy collection, in which *Anectumensis*, *Warreni*, *Aigburth Gem*, *Mrs. Dorman*, *Superba*, and *Flambeau* are also conspicuous for quality.

Two houses planted with young Vines four years ago are the foretaste of the fruit department, which is as well managed as the others. One contains Muscat of Alexandria, Madresfield Court, Mrs. Pince, Alnwick Seedling, and Duke of Buccleuch; the other, Lady Downe's, Alnwick Seedling, Mrs. Pince, Gros Maroc, Gros Colman, and Black Alicante. These have made first-rate rods, and carry excellent crops. Between this and the other range, in which Black Hamburgh is just ready with plenty of 2 and 2½-lb. bunches, is a corridor of Figs growing like Willows, and now swelling up their second crop. Two thousand Strawberries are forced. *Vicomtesse Hericart de Thury*, *Auguste Nicaise* (which does exceedingly well), *La Grosse Sucrée*, and *Helena Gloede* being the four standard varieties. The Peaches and Nectarines are models of good management. Lord Napier, *Grosse Mignonne*, and *Violette Hâtive* are finishing splendid crops. Alexander is now cleared, the first fruit having been gathered on April 15th. This valuable but eccentric Peach gives no trouble in the way of bud dropping or non-stoning at Tranby. The supply of Peaches is carried on to the second week in September. Mr. Leadbetter is a strong believer in summer pruning, and the trees speak eloquently of skilful treatment.

Violets are very extensively grown, and so are Roses in pots, and planted out under glass. Bushels of the latter are cut, the varieties comprising *Safrano*, *Souvenir de Gabriel Drevet*, *Etoile de Lyon*, *Sunset*, *The Bride*, *Climbing Niphetos*, *Jardin des Plantes*, *Madame Lambard*, *Jean Pernet*, *Catherine Mermet*, *Comtesse de Nadaillac*, *Souvenir d'un Ami*, *Grace Darling*, and *Rubens*—by no means a bad selection. Early *Gladioli* are largely grown in pots, and so are Begonias, tree Carnations, and Tuberoses. Amongst Orchids *Cymbidium Mastersi* and *Aërides Lobbi* are well represented; Disas grow like weeds, while *Cattleyas*, *Celogynnes*, and *Calanthes* are extensively and well cultivated. The herbaceous borders are a beautiful feature of the place. One long border has been glorious with huge masses of *Doronicums*, and is now brilliant with large clumps of *Hemerocallis flava*, *Inula glandulosa*, *Lupins*, and *Pæonies*. It would be easy to enlarge upon them, as also upon the well-managed kitchen garden, wherein Peas were gathered at the middle of May, and Cabbages from July sowings cut in the early part of April, neither a bad result for a northern garden; but one can only touch lightly on a few features of the place, leaving its true pleasures to be learned by a visit.

The recollections of Tranby Croft will be of a beautiful estate of which the resources are developed to the utmost by thought and skill. It is not a Sleepy Hollow, where matters go at a comfortable jog trot, but a noble home where hospitality reigns supreme, making heavy demands on the supply of fruits and flowers. Alert and energetic, Mr. Leadbetter is the sort of man to see that his department is not found wanting, indeed an impression is gathered that the lively atmosphere which prevails is more congenial to him than one of a soporific character would be. The gardens and grounds may be expected to grow in interest and beauty as the Conifers which enrich them develop further. With the judicious thinning that their number may perhaps be thought to demand some of them should grow into magnificent specimens, otherwise they may suffer from an embarrassment of riches. There can be few visitors to Tranby who will not desire to make another call in the fulness of time, and when the opportunity arises for doing so the visit will be paid with the fullest confidence that an already beautiful place has grown in distinction and charm.—W. P. W.

## "THE SCOUNDREL SPARROW."

In defending the sparrow it was certainly not my intention to be discourteous to "W. R. Raillem" (page 444), and I regret to have given him any reasons to think so. As I truly believe that the sparrow is not an enemy, but man's close companion and friend, the same as are our feathered songsters generally, I perhaps do write with somewhat strong feelings, the more so believing that through man's regrettable negligence, if not even unpardonable ignorance, birds are grievously wronged. As also were my parents, I, too, depending on garden produce



for my bread, I regret that I once had prejudices similar to those that your correspondent now possesses, but which, after much thought and close observation, have now entirely disappeared. And certainly my experience is practical. I have been favoured by an all-round experience, and since a very severe frost some fifteen years ago, having given special attention to the good and—yes, evil properties of sparrows and others of the hard-billed birds, and also to the unadulterated good of the more continuous insect-eaters, my position now is that of one not only experienced, but firmly grounded in the conviction that, with sparrows included in particular, birds grouped are good to mankind. To ignore that hither and thither there are not found those who have just reason to complain of vexatious depredations would be an injustice that fact does not justify.

Rather than simply describing the sparrow as “a feeder of seeds and vegetables,” it would be more correct, in populous towns especially, to describe him as a scavenger, and a bird that by its practically continuous attention to the ashpit and gutters purifies our atmosphere by clearing away unconsumed portions of flesh and filth, of which much accumulates near human habitations. But have your readers never observed how closely the sparrow copies man’s ways? He loves his home, he loves for food a good mixed dish, and he even delights in and takes his few weeks’ holiday, but, wise bird! just at the time when the new corn is in the milch state, a pleasant change to the palate, is desirable for his health’s sake. So it was, I suppose, that the cottager (page 445) was left with but the valueless straw to winter on. The grower had neglected to protect, as some easy people do their Apples from boys; and the sparrows, which cleared off the bloom of “W. R. Raillem’s” Apple tree, would, I suppose, also hold equally high festival.

But I suppose I must now proceed to give more tangent reasons for the faith that possesses me. Having nailed my colours to the mast I must justify how even a fruit grower can delight in birds. It is admitted of both birds and animals that they possess wonderful instinct. It is the same truth—man’s brain, with kingly pride, reigns over and subdues. Man as he marches on to futurity is a gatherer by the way; he probes deeper and still deeper, and so grows in wisdom. “W. R. Raillem” must tack his Apple tree to mine, and we must divide the average crops. If necessary he must even uproot it, as our noble army of engineers supersedes faulty vessels. He must look upon his pillaged Apple tree as the engineer looks upon the too-frail storm-tossed barque, not neglecting to recognise that these are simply difficulties destined to be overcome. In looking into Nature’s laws we find it more deeply engrained than man possibly can engrave that we must labour and cultivate, difficulties being the forerunner of knowledge, they making cultivation a necessity; and troubles, whether arising from the untamable elements, from the lowly sparrow or from any other cause, we must not risk ignorantly, but make sure only by wisdom’s ways to overcome them.

The sparrow’s nature is this. Near populous places where table sweepings are plentiful he will, whilst neglecting caterpillars, eat more or less green food as the nature of the more solid food secured necessities. On the contrary, if encouraged to breed in the open country, where the kitchenmaid’s delicacies are scarce, then he will during the blooming period greedily devour caterpillars, as my home-bred sparrows have now done for years, and without, except when the ground is wrapt in snow, so far as I can discover, ever even touching leaf or bud. Save the holiday period spoken of, they go poking about among the trees all the rest of the year, and so it is that, though I could do with a few extra hands during May and June, they succeed in protecting my crops from harm. But to expect such protection near large towns or near vicinity stackyards is folly, as the harder the food the more is greenstuff a necessity to birds. In such places, feather as preponderating over foliage, so we have a sample of these disasters out of which man’s desirable robustness grows.

As to the soft-billed, or more especially insect-eating birds, in the north we have them in too few numbers, and far too little with us, and but for the sparrows fruit crops would be a failure. I certainly would consent to replace that unneighbourly specimen that copied man so far as to attempt to take the martin’s house and goods, but as I do not breed such bad characters I have no reason to do so. As to getting worse, that, too, I hold as not satisfactorily proven, and attribute such charges rather to the cheaper press of these recent times, to greater facility in reporting such asserted retrogression. Sparrows, too, are quickeners of gardeners, not parasites on them; and did they in all cases succeed in moving gardeners’ brains to greater activity as they have frequently moved mine, so much the better would it be for gardeners and the commendable trade to which they are already so much credit.—JOSEPH WITHERSPOON.

WHEN at home much of that which I term my restful time is spent either in my gardens or in my little wood. It amounts to some hours a week, and this is for the observation of bird life and natural objects. I have read with attention the correspondence that has lately appeared in the *Journal* about sparrows. To me it is a very curious fact that there are some who deem the bird entirely a saint, while others aver that he is “an awful sinner.” Surely there must be “sparrows and sparrows”—sparrows good and sparrows bad; sparrows possessed of an evil spirit, besides those whose “ways” are all that can be desired. I am sorry to say that I have never had the good fortune to have a colony of the latter about my premises. We are told by one writer that the reason the sparrow is so very naughty is because he wants water; if he has that put for him he will not peck out the fruit buds. Now it so happens that I feed my birds well every day, and there are three

pans of water put for them, which is “refreshed” two or three times a day. One would think so good a bird as the sparrow is represented to be by some that he would have some feeling akin to gratitude for “past favours;” but if so he has a decidedly queer way of showing it unless he mistakes my desires, for he annoys me beyond endurance by pecking off all my Primrose flowers, my Crocus, and many other things he does that are equally wicked. In fact, I have a horror and a detestation of him, and would gladly be without him, in spite of all the good that he is said to do.

In my garden he is most troublesome and quarrelsome. He drives away my whitethroats, my blackcaps, and fights my thrushes. Some half wild Barbary doves came into my wood, when directly they settled the sparrows “went at them” and drove them away. I wish that the sparrows and the bullfinches would gratify those who see so much good in them by never leaving their orchards and gardens. I am fully aware of how the sparrows feed their young when they can get it—that is, on insect life; but this is only the first week of the nestling. After then they begin to give them grain, buds, or anything that they think suitable. “W. T. B.” (page 463) says he never saw them pick Croci. I have, and watched them patiently, and seen them tear off the blooms and throw them down by the dozen; and so with Primroses. As to their stopping water pipes, I stop that by putting wire netting over the tops. “W. T. B.” says the “hedges were swarming with various caterpillars,” and his sparrows cleared them. All I can say is that his colony are the “saintly” sparrows. I never knew any bird that would eat “various” kinds of caterpillars. Most birds have their particular kind of food, and will not starve in what be a land of plenty to others.

“W. T. B.” seems to think that sparrows are more destructive than formerly. One reason is that there are more of them. Fifty to sixty years ago here in Kent there were numbers of sparrow clubs for the purpose of destroying these “pests.” At this time barns were thatched, and I have seen the carter and his lad go round the buildings with a ladder and take hundreds of eggs of the sparrow in a few evenings, and also some time was spent in clearing them out of the martins’ nests. At that time I know, and which is contrary to the statement of “W. T. B.,” that they spoilt many rows of Gooseberry and Currant bushes. Lately, while watching some up in an Oak tree nearly over my head, I saw them time after time break off young twigs and throw them down. I examined several of these, and could not find a trace of an insect, and the twig was broken off at the woody, not the green part. This sort of thing still goes on, though they come to the water pans, and not only drink but wash in them. Be sure it never was called “the mischievous sparrow” for nothing, but it is so called, and I can vouch that in that way it not only has no equal, but by a long way it is unapproached.—HARRISON WEIR.

## THE DAHLIA.

[A paper read before the members of the Sheffield Floral and Horticultural Society by MR. M. H. WILLFORD.]

IN the introductory notes of this paper I have taken a few extracts from G. Glenny’s book on “Florists’ Flowers,” relating to the introduction of the Dahlia shows, and the rules laid down as to what should constitute a perfect flower.

The Dahlia was introduced to this country by the Marchioness of Bute, who brought the first species from Spain in 1789; but this plant was soon afterwards lost, other species found their way here, and they were bloomed in due course. During the next ten or fifteen years the Dahlia was taken in hand by the florists of Holland, France, and Great Britain, and they produced flowers far surpassing in beauty those from which they were raised.

At the period when the varieties were first becoming numerous there was every conceivable shape, size, and colour (excepting blue). There never was a plant so likely to be destroyed in value by the eagerness to multiply the sorts on sale, and the enthusiasm of the public to cultivate the largest collection. There was not at this time any notion about beauty; singularity was the first object, and brilliancy of colour went a long way towards making a flower singular.

The leading florists in England thought that a check might be put to the wholesale raising and putting on the market of so much objectionable stuff, which would be sure to disgust the public with the flower, so they established a show at Billingsgate, when a 5-guinea cup was given as a first prize, and the money paid for entrance was divided into second and third. These were given for the best twelve double flowers. The next show under the same auspices was at Hammersmith, when the first medals were issued in the name of the Metropolitan Society, not then fully organised. The result of this was the public abandonment of all but the proper double flowers. The publication of the “Properties of the Dahlia” in the Horticultural Journal banished all others from the garden as well as from the shows.

The following is an outline of the properties laid down for the perfection of the Dahlia:—

1st, The flower should be a perfect circle when viewed in front. The petals should be broad at the ends, smooth at the edges, thick in



substance, perfectly free from indenture or point, stiff to hold their form; they should cup a little, but not enough to show the under surface; they should be in regular rows, forming an outline of a perfect circle without any vacancy between them, and all in the circle should be the same size, uniformly open to the same shape, and not crumpled.

2nd, The flower should form two-thirds of a ball when looked at sideways; the rows of petals should rise one above another symmetrically; every petal should cover the join of the two petals under it, what florists call imbricating, by which means the circular appearance is perfected throughout.

3rd, The centre should be perfect; the unbloomed petals laying with the points towards the centre should form a button, and should be the highest part of the flower completing the ball.

4th, The colour should be dense, whatever it be, not as if it was a white dipped in colour but as if the whole flower was coloured throughout. Whether tipped or edged it must be free from splashes, blotches or indefinite marks of any kind. If the petals show the under side too much, even when looked at sideways; if they do not cover each other well; if the centre is composed of petals pointing upwards, or those which are round the centre are confused; if the petals are too deep and funnel-like; if the petals are too narrow or exhibit too much of their length, or if they show any of the green scale at the bottom of the petals; if the eye is sunk, if the shoulder is too high, the face flat, or the sides too upright; if the petals show an indenture as if heart-shaped; if the petals are too large and coarse, or are flimsy, or do not hold their form, in any or all these cases the flowers are objectionable, and if there be one or two of these faults conspicuous the flower is second or third rate.

After these notes as to what a good Show Dahlia should be we will now think about the cultivation of them, along with the later introduction of the Pompon, Cactus and Decorative varieties.

The first thing to consider is the preparation of the ground. A position should be chosen where they will have as much sun as possible, but sheltered from the rough winds. Some growers advise manuring in the autumn and turning up the soil, leaving it rough all the winter, so that the frosts will sweeten it by planting time, others prefer roughing up the ground in autumn and manuring in spring. I think the most economical way is to turn over the ground several times during the winter; by so doing the soil is thoroughly sweetened and the insects are more effectually destroyed, for if you only rough the ground up in autumn and leave it alone until spring the insect grubs know by instinct where they will be safe from harm, either by frost or birds, so they get into the soil deep enough to effect that purpose; but if you disturb them by bringing them to the surface you clear the ground more effectually.

In April mark out the positions for the plants, say 5 feet from row to row, and 6 feet between the plants, placing them diagonally so that each plant in one row will come half way between the plants in the next row. Dig holes about 24 inches in diameter, and as deep as the soil will allow, taking care not to turn up the hungry subsoil at the bottom. Put into each hole a couple of spadefuls of well decayed manure—if the soil is light or of a sandy nature use cow manure—thoroughly mix the manure and soil, and leave until planting time. This is how I treat mine, with the exception of the single and Pompon varieties; these I plant without manure, as I believe manuring tends to make them gross in growth, giving deformed and seed eye blooms. Pompons should be as small as possible, but have the same form and properties of the Show Dahlias. Single Dahlias also lose their charm when grown as large as we often see them. I find a slight top-dressing towards the end of August, or when the plants have nearly exhausted the soil, is all that is necessary in the way of food. As a stimulant I use soot water occasionally.

Now as to starting the tubers and preparing the plants. Some growers start their tubers as early as January, but those who only want a small collection will find the first week in March soon enough. The tubers can either be potted singly or planted several in a box. Place in a warm corner of the greenhouse, or if there is plenty of fresh manure a hotbed can be made, in fact almost any place will do to start them in, providing you can command a temperature of 50° to 60°. When the tubers have started some growers divide them and pot each piece singly, keeping only one or two eyes to each piece; others take off the shoots when about 2 inches long, with a piece of the tuber attached, and put them singly in thumb pots or four or five round the edge of a 5-inch pot, keep them close until they have rooted them, remove to cooler quarters, and grow them sturdily; after they have propagated what stock they require they throw away the old tubers. I think it is preferable to select one or two strong shoots, and rub off all the others as they come, grow these on the old tuber, and if they get root-bound before planting time give them a shift into a size larger pot, keep them

close to the glass, and as soon as weather will permit remove to a cold frame, and you will find that by the first or second week in June (which time is soon enough for planting out without protecting at night) you will have strong plants beginning to show bud in most cases, with plenty of roots to support them. They can be planted out and grown without a check, whilst plants from cuttings have to be grown in heat, which generally makes them weak and spindly, or if grown cooler they are very small at planting time in most cases, taking them until the end of July before they begin to show any sign of blooming. The Cactus varieties especially do best when grown on the old stools; such varieties as Juarezi and Charming Bride are very shy bloomers when grown from the cutting.

(To be continued.)

### IRIS LORTETI.

BLOOMS of this very distinct Iris were exhibited by Mr. C. G. Van Tubergen at the Temple Show this year, but it was not until more



FIG. 88.—IRIS LORTETI.

specimens were staged at the Drill Hall on Tuesday, June 6th, that the Floral Committee of the Royal Horticultural Society awarded a first-class certificate. From a sketch of a flower shown on the latter occasion the illustration (fig. 88) has been prepared. This portrays the size and the character of the bloom. The falls are broad, of a curious dark grey shade, covered with minute bright purplish brown spots. The standards are also large, whitish, faintly tinted with mauve, and veined rosy purple. It is a grand species, and will doubtless find its way into most collections. The flowers if not particularly showy are very quaint and interesting.



## CUCUMBERS AND MELONS AT ROWLEDGE.

THE village of Rowledge lies about two and a half miles from the famous Hop town of Farnham, in Surrey, and is situated on a high heathy common. Many years ago squatters took possession of small portions of this wild area, built huts, and in time developed into small, and perhaps poor landowners. Thus it is that now, although there is poor sandy common everywhere, there are scores of cultivated plots, and small houses dotted about. It might have naturally been thought a most unpromising spot in which a gardener should settle down and found a nursery; but that is what Mr. Mortimer did a few years ago, and if he were on the one hand daunted by the miserable barren poverty-stricken look of the soil in its unregenerate state, certainly there were about in all directions ample evidence that persistent cultivation could do wonders in the work of regeneration. Thus it has come about that a soil, presumably dear at £5 per acre, has, under trenching and manuring, become capable of sustaining fruit trees admirably, vegetables, Dahlias, Coniferae, indeed is fast becoming first-class soil, because it has, in spite of its apparent poverty, yet in it the elements of undoubted profit. Of course the nature of the external soil has little to do with the production of Cucumbers, Melons, Tomatoes, &c., under glass; but no nursery can succeed unless the ground be utilised to the utmost, and that is the case at Rowledge. The soil being sandy though shallow, it is readily pulverised, and thus is always somewhat moist. Even now, after many weeks of persistent drought, just beneath the sandy surface there is a delightful cool condition of moisture, such as could not be found in many deep retentive but still baked clay soils. After what is seen at Rowledge, no one should assume that any soil, however hungry it may seem, is too poor for cultivation. Could some of the waste millions of gallons of sewage poured into the Thames from London be utilised on these sandy heaths, the ground might soon be converted from barrenness into a condition of high fertility.

Mr. Mortimer makes the production of Cucumbers and Melons for seed purposes a great speciality, and his many famous varieties of the former, certainly some of the best in the kingdom, speak volumes for his skill as a raiser. Tomatoes are also very largely grown, but chiefly for market fruit purposes. In a long span-roof house is a batch of a seedling Cucumber the product of a cross between Telegraph and Matchless. This occupies about 50 feet run on one side only. Seed was sown early in January. The plants are some 5 feet in height, carrying on the wires two stems only. Every fruiting shoot is rigidly pinched just beyond the fruit. This batch has many grand fruits, now from 22 to 24 inches long, almost ripening, whilst others are coming on in rapid succession. The fruits all show the true Telegraph form, but are much darker and handsomer. In the next division of 50 feet is another cross-bred variety, Telegraph x Lockey's Perfection. This, which gives rather shorter but very handsome smooth fruits, is a profuse bearer, many fruits being borne in pairs. It should make one of the finest possible market Cucumbers. The plants are only 18 inches apart, growing on a bed formed from the natural soil, slightly hollowed to a trough form, 30 inches wide, and some 8 to 9 inches deep. All along the entire length of the other side of the house are grand plants of Stephanotis. There are four of these growing in beds 3 feet square. Each one covers a length 25 feet by 6 feet of roof, blooming profusely, and growing luxuriantly. It seems an odd combination this of Stephanotis and Cucumbers, but it answers well.

In a second similar span house the entire first half is full of similar plants of Success, as originally named, or now by the Messrs. Sutton and Sons named Peerless. These plants were put out the second week in March, are now some 5 feet in height, having splendid leafage, and are fruiting profusely. The stock is remarkably true to character. The second half has more of the same Cucumber, and then all one side and one-half the other is filled with twenty-five sorts of Melons in pairs. Seed of these was sown early in March. All are restricted to one stem, and are planted like the Cucumbers 18 inches apart. The plants are now from 5 feet to 6 feet in height, and fruiting freely. The trial, which is being conducted solely for an eminent seed firm, should prove to be of exceeding interest. In this house cuttings of Fuchsias, of which many thousands are annually raised for sending out in small plants, are rooted with great success in pure common sand alone, placed in boxes, each box holding eighty cuttings. In this they make strong roots, and lift from it most readily. In another house there are growing Perfection, Plentiful, Conqueror, Maincrop, and other Tomatoes, plants about 4 feet in height, planted in 2½-foot beds, and 18 inches apart. All of them are fruiting heavily. Mr. Mortimer does not take great pains to fertilise the flowers. He finds every purpose answered by giving the sticks supporting the plants occasional sharp raps, which suffice to liberate the pollen. In this house there are large numbers of small bush Fuchsias in 48-pots to give cuttings for stock. Some of these have been in the pots for four years. They get an annual top-dressing of fresh soil.

Another house of 60 feet is devoted to Melons grown precisely as before mentioned. As this is a span-roof and the plants are heavily fruiting it will present a remarkably fine sight a little later. The varieties are Hero of Lockinge and Express. These are planted in wooden troughs 20 inches broad and 7 inches deep, with open bottoms, practically resting on the two flow pipes on each side. Then comes a long 100 feet house full again of Tomatoes Magnum Bonum, Conqueror, Earliest of All, &c., yet another same length of Melons Hero of Lockinge, Sutton's Al, Golden Perfection, Empress, and others. These are in shallow wooden troughs as before, the plants some 6 to 7 feet in

height, and fruiting heavily. Seed was sown first week in January, moving badly at first, were planted out the middle of February, no water allowed to come within 3 inches of the stems. The general appearance of the plants is superb. Occasional dressings of Thomson's Vine manure, and regular waterings with clear weak soot water are given. Other houses are devoted to Dahlias, of which a large stock of all the best sorts is grown, and Zonal Pelargoniums, ordinary flowering plants, a few Vines, and Peaches. Everything is well done, the seed specialties particularly so. Seed of the beautiful *Nemesia Strumosa Suttoni* sown in boxes in one of the houses were germinating at the time of my visit. This will be planted out to give seed stock for the Reading firm only. This annual grew most luxuriantly here last year.

In the grounds I saw numerous good bushes of Whinham's Industry Gooseberry growing and fruiting most abundantly. Mr. Mortimer is most favourable to it, not only because of its neat habit and free precocious fruiting, but also because so hardy. That is a special attribute of the highest importance to an early Gooseberry.—D.

ORNITHOLOGY IN RELATION TO AGRICULTURE.  
AND HORTICULTURE.\*

THE subject of agricultural and horticultural economics, considered in the relations of birds and insects to the produce of the soil, is one which, till recent years, has been singularly neglected in this country. In France, Belgium, and especially in America, as well as in other civilised countries, the most careful and practical investigations, under the assistance of the State, have led to the accumulation and diffusion of much valuable information on this and kindred subjects. In England, the researches of Miss Eleanor A. Ormerod are recognised as of great value in enabling the farmer and gardener to detect the various insect pests which take tithe of his crops, and in teaching him how best to apply suitable remedies for their prevention or extirpation.

Mr. John Watson has brought together a series of useful papers and notes by various naturalists, whose names are a sufficient guarantee of the high practical value of the opinions expressed, in connection with ornithology in its bearings on agriculture and horticulture. The book is divided into twelve chapters, under the various headings of Hawks and Falcons, Owls, Wood Pigeon, Rook, Starling, Miscellaneous Small Birds, Game Birds, and an appendix, with notes and additions. No less than five chapters are devoted to the sparrow, those "rats of the air," "ruffians in feathers," whose mischievous and destructive character are recognised and acknowledged by farmers and gardeners over half the world.

The larger birds of prey, buzzards, kites, goshawks, harriers, and the noble peregrine are now virtually extirpated in England, and the smaller hawks and falcons, and also owls, are far less numerous than formerly. There are at present large districts in England where you may wander all day without seeing a single bird of prey. This has been brought about by the excessive rage for game-preserving. As a class, game-keepers, considering the great opportunities at their disposal, are proverbially ignorant of natural history, and seem quite incapable or unwilling to discriminate, even from their own narrow standpoint, between the good and the bad. The natural result, therefore, of so much misplaced zeal has been an enormous increase in wood pigeons, sparrows, rats, and mice, which, now that their natural enemies, the birds of prey and weasels, have been destroyed, flourish and multiply unchecked, and yearly destroy great quantities of valuable cereals and other farm and garden produce.

In the five chapters relating to the sparrow, the evidence for the prosecution greatly outweighs that for the defence. It is clearly shown that the depredations of this pest on fruit tree buds, to fruit farmers, florists, young crops of vegetables, and more especially to corn in autumn, is enormous, and far in excess of any benefits conferred by the consumption of injurious seeds and noxious insects. They entail also direct harmful consequences by their pugnacious and self-assertive nature in driving off useful insectivorous birds from the neighbourhood of their haunts. Yet it is by no means clearly proved that an utter and complete extermination of the sparrow nuisance would be a benefit, for when man upsets the balance of nature, he very often has to pay for it in some form or other.

The sparrow certainly requires no Act of Parliament to protect him, and the plea of sentimentalists and humanitarians that he should be allowed to increase and multiply unchecked, will certainly never be listened to by those country folk who are best able to form a judgment in the matter.

There can be no doubt that, during the last half century, the wood-pigeon or ringdove (*Columba palumbus*) has increased to an enormous extent. The causes of this increase are, doubtless, the killing off of the falcons and hawks, which are the natural enemies of the race, the increase of woods and plantations, especially those of Fir, and the abundance of winter food in Turnips and other green crops. It is quite certain, too, that in the autumn the ranks of our local birds are greatly increased by immigrants from the Continent. In the autumn wood pigeons congregate and attack the ripening corn, particularly in those spots where it is storm-laid, devouring great quantities, and crushing and trampling the heads to near the ground, so that in a wet season much becomes hopelessly sprouted. In winter they commit serious ravages in the Turnip crops by eating the leaves, thus exposing the bulb to frost. They are also very partial to the young Clover plant. The

\* Ornithology in Relation to Agriculture and Horticulture. By various writers. Edited by John Watson, F.L.S., &c. London: W. H. Allen & Co., 1893.



ringdove, however, has redeeming points, its plaintive coo, roo, coo, coo, is a pleasant sound at early morning in spring woodlands, and in the winter it is a real sporting bird, and excellent eating.

The injury done by rooks has often been much exaggerated by farmers and others. If we put aside those periods of the year when it levies contributions on the newly sown corn, especially when badly covered, the time when the corn is ripening, injury done to stacks and Swede Turnips in severe weather—we have pretty well enumerated all the charges brought against him. All the rest of the year he is ridding the pastures of injurious grubs, such as the larvæ of the cockchafer (*Melolontha*), and of the crane fly (*Tipula*). In recent years rooks, in those districts where they are too many, or short of food in a drought, have been accused of developing egg-stealing propensities, and harrying the nests of game birds and wild fowl, and killing the young, and we are afraid he is not altogether guiltless in this respect.

The starling, considered from an agricultural point, is the greatest possible friend both of farmer and gardener, its food during the whole of the year consisting of grubs, small molluscs, worms, and insects, and only very occasionally fruit and berries. In the autumn immense flights of migrating starlings come to us from the Continent; these are an Eastern race, distinct from our common bird, and have purple heads and green ear coverts, and they leave the country in the spring.

In conclusion, to sum up the evidence both for and against, as placed before us by the able ornithologists in Mr. Watson's book, it is abundantly apparent that the case for the prosecution falls very far short of the defence, and that the verdict must be an acquittal for the birds, both as regarding individual species and in the aggregate, with an admission that the benefit they confer upon man is far in excess of the injury. There is one exception to this, and that is the ubiquitous and all-devouring sparrow.

"O wretched set of sparrows, one and all."

Perhaps no greater mischief is done than by that large class of sentimental writers who are ever ready to exaggerate the good qualities of their feathered favourites and to minimise the evil. It must, however, be apparent to the duller intellect that no wild bird is able to draw a line between the natural production of the soil and those seeds and fruit which are the results of man's industry.—JOHN CORDEAUX (in *Natural Science*).

#### PANSY SHOW AT THE MOSELEY BOTANICAL GARDENS, BIRMINGHAM.—JUNE 6TH AND 7TH.

THE Exhibition of these flowers on the above date, although not a large one, brought out a number of very fine new varieties, and these were well arranged in the handsome library of the College. For forty-eight blooms, open to all, Messrs. Pope & Sons, Kings Norton Nurseries, Birmingham, was first with a stand of good flowers, Tom Travis, Henry Eckford, Mrs. Mark, Miss Hudson, James Campbell, George Anderson, and Kate McArthur especially good blooms. There was no other competitor in this class.

In the class for twenty-four blooms of Fancy Pansies, open, Mr. Irvine, florist, Tighnabruaich, N.B., was first with grand blooms of Arthur Eaton, Mrs. M. Cuthbertson, Mrs. James Brown, Tom Travis, John Knox, Miss Cullens, Mrs. T. Ritchie, Dr. Bostock, and others. Messrs. Pope & Sons, King's Norton Nurseries, were second, and in this stand were excellent blooms of John Morris, a rich coloured bright seedling of great merit; David Rennie, Henry Eckford, Tom Travis, and Mrs. Hugh Weir. Messrs. Kimberley & Son, Stoke Nursery, Coventry, were third; and Mr. T. M. Eglington, Birchfields, Birmingham, fourth. For eighteen blooms, open, Mr. Irvine was first; Mr. A. C. Christie, Shifnal, second; Messrs. Pope & Sons, third; and Mr. Wm. Fletcher, Shifnal, fourth. In the open class for twelve seedling Pansies Mr. Irvine was first, and some of them were very fine. Messrs. Pope & Sons second, and their seedling John Morris was good in this stand. Mr. A. C. Christie was third. In the classes respectively for eighteen and twelve bunches of Violas Mr. W. H. Gabb, Small Heath, was first, amongst his varieties being Annie King, Lady Amory, Bridesmaid, Master of Arts, very fine; Spotted Gem, William Neil, Gipsy Queen, Mrs. Charles Turner, Sir Joseph Terry, Duchess of Albany, Dorothy Tennant, Dean's Golden Gem, Mrs. Wm. Frater, Dean's May Queen, and Duchess of Fife.

Mr. J. Egginton, Wolverhampton, sent (not for competition) a fine display, including a superb bloom of James Swan, and fine blooms of George Henderson, J. D. Irvine, Lord Hamilton, and Mr. T. Crosby. Mr. Wm. Sydenham, Tamworth, also contributed a very fine display of Fancy Pansies, for which a first-class certificate was awarded. Amongst these Arthur Eaton, Tamworth Curate, John Lamont, Tamworth Yellow, Rev. C. Gressly, Mrs. C. L. Carnegie, Mrs. J. D. Crooksbone, John Allen, Mrs. W. Frater, Emmie Stuart, James Campbell, Victory, and Dr. Harrison were very fine.

Mr. Andrew Irvine, Florist, Tighnabruaich, N.B., contributed some very grand seedling Fancies for exhibition, but as there were not the required three blooms of each only three first-class certificates were awarded to his new varieties—viz., Mrs. Spence, a grand white self with superb blotch, an extra fine flower; to English Yellow, a medium sized, very refined flower of exquisite quality, golden yellow with perfect blotch; and to John Black, a grand bronzy crimson self of large size and the finest quality. First-class certificates were also awarded to Mr. T. D. Stuart, Malone, Belfast, for Emmie Stuart, a grand rosy pink-tinted flower, distinct and of the finest quality; and to H. W. Clark, rich golden yellow with superb blotch and dark top petals and very fine. A

first-class certificate was also awarded to Mr. J. Smellie, Florist, Busby, Glasgow, for Mrs. Wm. Watson, an improved Mrs. John Downie.

Mr. Irvine had some more splendid seedlings, amongst them Dora Dean (Stuart), a flower of the finest quality; Nellie Gabb, a beautiful yellow with clean blotch, which is continued in the upper petals; Mrs. Sherrard, carmine tinted flower; Maggie Lockhead, light flower with large blotch; Mr. R. Stark, very bright; Mrs. T. Morton, fine; William Hill, a grand rich flower of great substance, and extra fine; Mrs. Herbert, of Archie Buchanan style, but finer, with shoulders high and close; Annie Hill, a rich flower with superb blotch, and of the finest form; and C. H. Herbert, a very distinct rich coloured flower and extra fine; Mr. E. D. Martin, white tinted with lilac and large blotch.

Mr. I. D. Stuart, Belfast, sent several blooms each of some beautiful seedling Violas, many of them being so distinct and of such fine quality that first-class certificates were awarded to Carissima, veined rosy lilac and white; Erin, a very fine rich violet, striped and clouded flower; Diva, snow white, and entirely rayless, small flowers; Hibernia, rich purple striped, distinct and fine form; Commodore, pale blue lavender, a most pleasing shade of colour, and an acquisition; Mary Stuart, white of fine form, and entirely rayless; Mrs. Joseph Chamberlain, suffused rose and lilac; Con. O'Neil, white striped with rich violet purple, very bright; Lady Dufferin, white, clouded and striped with lilac; Lovelight, white, with a Picotée edging of lavender. Mr. Stuart has evidently a fine strain of seedling Violas, and he is equally fortunate in seedling Fancy Pansies, being the raiser of some of the fine seedlings shown by Mr. Irvine, and such flowers as Mrs. T. D. Stuart, Emmeline, and many others.

A tray of very fine Mushrooms grown under the arches on which the college is built was shown by Mr. Ross.

#### EARL'S COURT ROSE SHOW.

JUNE 14TH AND 15TH.

A SUPPLEMENTARY Show of Roses was held at the Gardening and Forestry Exhibition, Earl's Court, on the above dates. This was practically the first Rose Show of the season, and notwithstanding the prolonged drought the blooms staged were of first-rate quality. Both the open and amateurs' classes were well filled, and in some instances the competition was very keen.

In the class for thirty-six Roses, distinct, single trusses, Mr. B. R. Cant, Colchester, secured the leading prize. The blooms were very fine and freshly coloured. The best of the varieties shown included Gustave Piganeau, A. K. Williams, La Havre, Madame Gabriel Luizet, Prince of Wales, Horace Vernet, and Sultan of Zanzibar. Mr. Frank Cant, Colchester, was a close second, the blooms in this stand being perhaps a little smaller, but of excellent form. Grace Darling, J. D. Pawle, Prince Arthur, A. K. Williams, and Etienne Levet were very good in this contribution. Messrs. G. Paul & Son, Old Nurseries, Cheshunt, were third with flowers that would in some instances have taken a premier position.

For twenty-four, distinct, single trusses, Messrs. D. Prior & Son, Myland Nurseries, Colchester, were awarded the first prize. The flowers were fresh and well coloured, especially Victor Hugo, Gustave Piganeau, Annie Wood, and Abel Carrière. Mr. G. Mount, The Nurseries, Canterbury, was second with excellent flowers; the third prize going to Messrs. G. Cooling & Sons, Bath, for a stand of fresh blooms. The competition in this class was very close, there being no less than eight exhibitors.

In the class for twenty-four Roses, distinct, three trusses of each, there were six competitors, including some of the leading growers in the country. Mr. B. R. Cant, however, proved the winner after a keen contest, staging flowers of medium size, but remarkable for their colour. Mr. F. Cant was a close second. The third prize went to Messrs. D. Prior and Son, Bath.

The Tea and Noisette Roses were very fine. In the class for eighteen varieties, three trusses of each, Messrs. D. Prior & Sons, Colchester, were awarded the first prize. The best blooms in this stand were Catherine Mermet, Marie Van Houtte, Madame Lambard, Jean Ducher, Innocente Pirola, and Ernest Metz. Mr. Frank Cant was second with a stand of neat blooms, the third prize going to Mr. George Prince, Oxford. The latter's stand included some grand blooms of Princess of Wales. Mr. B. R. Cant was awarded an extra prize in this class. Messrs. D. Prior and Sons were also first with eighteen Teas and Noisettes, distinct, single trusses. The flowers were excellent, the best being Catherine Mermet, Adam, Rubens, Marie Van Houtte, and Jean Ducher. Mr. G. Prince was a good second, the third prize going to Mr. J. Bradbury, gardener to S. P. Budd, Esq., 8, Gray Street, Bath.

In the amateurs' class for twelve trusses of any Teas or Noisettes C. J. Grahame, Esq., Coombe Road, Croydon, was awarded first prize, showing neat blooms of Hon. Edith Gifford. A. H. Gray, Esq., Beaulieu, Newbridge, Bath, was second with well coloured Maréchal Niel, Mr. J. Bradbury being third. R. L. Knight, Esq., Bobbing, Sittingbourne, was awarded first prize for twelve Teas or Noisettes. This stand comprised Souvenir d'Elise Vardon, Ernest Metz, Maréchal Niel, Comtesse de Nadaillac, Catherine Mermet, Scipion Cochet, Madame Cusin, Hon. Edith Gifford, The Bride, Jules Finger, Anna Ollivier, and Souvenir de Paul Neyron. Mr. J. Bradbury was second; and Mr. Mease, gardener to A. Tate, Esq., Downside, Leatherhead, third. For twelve trusses of any Tea or Noisette (open) Messrs. D. Prior & Sons were first with fine blooms of Marie Van Houtte; Mr. Frank Cant was second with a box of Hon. Edith Gifford; and A. H. Gray, Esq., being third with Maréchal Niel.



Mr. B. R. Cant was awarded the premier prize for twelve blooms of any light Hybrid Perpetual, showing a splendid stand of Madame Gabriel Luizet. Messrs. D. Prior & Sons were second with La France, and Mr. C. Turner, Royal Nurseries, Slough, third, with Madame Gabriel Luizet. Mr. Frank Cant secured the leading position for twelve dark Hybrid Perpetuals, showing splendidly coloured Horace Vernet. Mr. C. Turner was second with Marie Baumann, and Mr. B. R. Cant third with A. K. Williams. Mr. W. Mease was first for twelve bunches of garden Roses, the Rev. J. H. Pemberton, Havering-atte-Bower, Essex, being second.

In the amateurs' class for twelve Roses in distinct varieties, three trusses of each, Mr. J. Bradbury, gardener to S. P. Budd, Esq., Gay Street, Bath, was awarded the first prize. The varieties staged were Gabriel Luizet, Madame Cusin, Princess of Wales (good), A. K. Williams, Caroline Kuster, Prince Arthur, Edith Gifford, Comtesse de Nadaillac, The Bride, Mons. Noman, Innocente Pirola (good), and Alfred Colomb. J. Gurney Fowler, Esq., Woodford, Essex, was second with a creditable exhibit; and Mr. Mease, gardener to A. Tate, Esq., Downside, Leatherhead, third.

For twelve Roses in distinct varieties, one bloom of each, C. J. Grahame, Esq., Coombe Road, Croydon, was first, staging fine examples of La France, Victor Hugo, Madame Gabriel Luizet, Dupuy Jamain, Innocente Pirola, Gustave Piganeau, Viscountess Folkestone, Xavier Olibo, Edith Gifford, Souvenir de S. A. Prince, and Mrs. John Laing. J. Gurney Fowler, Esq., was second; and Mr. J. Bateman, Rosevale, Archway Road, Highgate, third.

For twenty-four blooms in distinct varieties, the Rev. J. H. Pemberton, Havering-atte-Bower, Essex, was awarded the first prize for an excellent exhibit. His stand comprised La France, Duchess of Bedford, Maid of the Mist, A. K. Williams, Caroline Destout, Gustave Piganeau, Marchioness of Dufferin, Victor Hugo, Etoile de Lyon, Etienne Levet, The Bride, Marie Baumann, Duchess of Albany, Horace Vernet, Jeannie Dickson, Comte Raimbaud, Mons. E. Y. Teas, Comtesse de Nadaillac, Lady Mary Fitzwilliam, Lady Helen Stewart, Jean Ducher, Charles Darwin, Mrs. James Wilson, and Exposition de Brie. Mr. Bradbury was awarded the second, and R. L. Knight, Esq., Bobbing, Sittingbourne, third. There were six competitors in this class. In the class for twelve blooms of any Hybrid Perpetual, J. Gurney Fowler, Esq., was first with Mrs. John Laing; A. H. Gray Esq., Beaulieu, Newbridge, Bath, second with Madame Gabriel Luizet; and Mr. J. Bradbury third with the same variety.

Mr. Chas. Turner, Royal Nurseries, Slough, was awarded first prize in the class for twelve bunches of garden Roses, including, amongst others, Turner's Crimson Rambler, Boule de Neige, Lamarque, and W. A. Richardson. Messrs. G. Paul & Son, Old Nurseries, Cheshunt, were awarded the second prize, and Messrs. G. Cooling & Son, nurserymen, Bath, the third.

Miscellaneous exhibits were numerous and of a varied character. Messrs. Wm. Paul & Son, Waltham Cross, arranged a charming group of cut and pot Roses, prominent amongst which were Corinna, Duke of York, Marie Van Houtte, Antoine Ducher, Blanche Moreau (Moss), Hon. Edith Gifford, L'Ideale, and Madame P. Perny. An extra prize was awarded for this grand contribution, which was one of the finest collections of cut Roses we have seen. Messrs. D. Prior and Son staged a beautiful stand of Rose Wm. Allen Richardson "not for competition," and Messrs. G. Cooling & Son two boxes of old-fashioned garden Roses.

Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, staged some grand hardy flowers, including Gaillardias, Poppies, Spiræas, Ixias, Delphiniums, and Lilium Poulentia (certificate). Messrs. P. Barr & Son, King Street, Covent Garden, staged two fine groups of hardy flowers. Prominent amongst others in these exhibits were Delphiniums, Gladioli, Irises, Liliums, Iceland Poppies, Ixias, and Centaureas. Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, arranged a very fine group of plants, including Palms, Clematises, Spiræas, Hydrangeas, Begonias, Aspidistras, and Irises. Mr. H. J. Jones, Ryecroft Nursery, Lewis- ham, S.E., exhibited a collection of Fancy and Show Pelargoniums. This was a very fine exhibit, the group including, amongst others, Jules Ferry, Eclipse, Sir Trevor Lawrence, President Harrison, Rose Queen, Countess, Princess May, Tommy Dodd, and Decorator. The same exhibitor also staged a basket of his fine Ivy-leaf Pelargonium Ryecroft Surprise, for which a certificate was adjudged.

Mr. W. Rumsey, Joyning's Nursery, Waltham Cross, sent six boxes of cut Roses not for competition, including Tea and other varieties. Messrs. H. Cannell & Son, Swanley, sent a fine collection of cut Begonias, and the blooms being staged in bunches attracted some attention. Messrs. J. Cheal & Sons, Crawley, had hardy flowers, Roses, and Violas in variety, as also did Mr. E. F. Such, Maidenhead. Mrs. M. Hodgkins, Didsbury, arranged a table of skeletonised leaves of flowers. Extra prizes were awarded to the foregoing, also to Miss M. Walton for table decorations.

Mr. S. Mortimer, Rowledge, Farnham, staged a large collection of Tomatoes, Cucumbers, and Melons. Some of the latter were of splendid flavour, the best being Duke of York, green fleshed, rich and juicy; Miss Etell, green flesh, fine flavour, and Isinglass, a grand scarlet fleshed variety of first-rate quality. These are new seedling varieties and will doubtless be heard of in the future. A silver-gilt medal was awarded for Mr. Mortimer's contribution. Mr. T. Hardy, Ash House, Parson's Green, S.W., staged some very fine Mushrooms, which had been grown outdoors on the ridge system. A silver medal was awarded for this exhibit.



#### HARDY FRUIT GARDEN.

**Summer Pruning Young Fruit Trees.**—Whatever the age of fruit trees there is generally some necessity during the growing season to curb excessive growth in order to equalise the vigour and prevent its accumulation in a few specially favoured parts. It is also essential that superfluous shoots should be early dispensed with, that they may not become robbers of sap to an undue extent. The judicious suppression of weak, crowded, misplaced and gross wood will render the training of trees in the desired forms much easier of accomplishment, as well as concentrate the vigour in the special parts needing it, with a view to a proper balance of growth and productiveness in the future.

**Maiden Trees.**—Laterals sometimes form in the axils of the principal leaves and extend. When such appear they should be cut back to one leaf, further extension subsequently also being restricted to one leaf. The stock on which the leading growth was worked ought especially to be kept clear of superfluous growths. Latent buds may push growth sometimes during the season. Remove them promptly. No shortening of the stem or leader should be done during the summer.

**Pyramids.**—Stop the side shoots on the main branches to four leaves, and subsequent growths from them to one leaf. The upright leader and the extremities of the chief branches may be topped when a foot or more long. The branches must be sufficiently far apart to permit the sun's rays to reach the leaves. Overcrowding of the growths in summer is inimical to productiveness.

**Bush Trees.**—The main object with these is to keep the growths thin. Summer prune as above advised, but do not cut back short-jointed shoots that may be developing a fruiting bud at the point. Open bush trees are generally allowed more freedom. Thin crowded shoots; any crossing or interfering with adjoining growths are better cut out entirely. Their removal will improve the shape of the trees, and the admission of sun and air to the centres of the bushes will be better effected to the permanent advantage of foliage, wood, and fruit.

**Horizontally-trained Trees.**—Two-year-old trees producing side shoots on the main stems may have these shortened back to four leaves when the latter have attained full size. Sub-laterals forming afterwards pinch to one leaf. Shoots originating from latent buds on the upright central stem may, if well placed, also be pinched and closely shortened in autumn for forming spurs. Avoid retaining too many. The extension of the leaders will be accelerated by pinching the side shoots, sometimes causing the leader of the central stem to grow rapidly. The opportunity may then be embraced of pinching it at a point where a fresh pair of side stems are to be originated. Two pairs are thus easily secured in one season.

**Cordon Trees.**—The side growths originating on the lower parts of young trees, trained either upright, horizontally, or obliquely, must be shortened to the fourth good leaf. The leading growths seldom need shortening, but the exceptionally vigorous may have their points pinched when the growths exceed 15 inches, or they may be depressed. This arrests vigorous growth, and concentrates the sap in the lower buds. It also assists the development of side growths, which having produced six good leaves are pinched to four for the production of fruiting spurs.

**Standard Trees.**—This form of tree in the course of formation requires a certain amount of summer pruning. When the stem has to be formed from a maiden tree side shoots are allowed to form on the single upright shoot as it extends. Their presence adds materially to the thickening of the stem if they are summer pruned similar to other growths. In winter they are cut clean away. After the required height of the future stem has been reached the growth above that point must be allowed to develop half a dozen full sized leaves, and then be suppressed by pinching above that number. Lateral shoots will certainly push, to be cut back in winter for the formation of main branches the following year.

**Propagating Strawberries for Forcing.**—Strawberries for pot culture and forcing purposes require to be propagated early, the present month being the best time. Select runners from strong plants which have during the season given indications that they are not barren. As the plantlets become large enough peg the first and strongest produced on the surface of good loamy soil, firmly compressed in 3-inch pots placed in convenient positions. Afford water to maintain the soil moist and to encourage rooting. When this is well accomplished detach the runners from the parent plants, and set the pots on a moist base of coal ashes in a sunny position, where they will soon fill the pots with roots ready for transference to 5 and 6-inch pots for fruiting.

**General Work.**—Continue to thin fruit where the crops are heavy. Make constant warfare with insects. Assist old-established or feeble trees with liquid manure. The roots will appropriate a considerable quantity if the soil be moist with positive benefit. Wall trees frequently suffer from lack of moisture in the soil. Dry seasons cause excessive evaporation from the foliage, which then makes extra demands upon the roots, the latter upon the food stores in the soil. Any deficiency is then felt throughout the tree's system, and pests of various



kinds take the earliest opportunity of establishing themselves. If more attention were given to the roots of trees there would be better crops, cleaner growths, and a comparative immunity from diseases.

### FRUIT FORCING.

**Peaches and Nectarines.**—*Earliest Houses.*—When the fruit is gathered admit all the air possible day and night unless the weather be exceptionally cold, when modify the ventilation. If the roof lights are moveable take them off about a month after the trees have been cleared of fruit and had full ventilation for at least a fortnight. Where red spider or brown scale has obtained a footing eradicate the pests promptly, red spider, by syringing with a solution of softsoap 2 ozs. to a gallon of water, applying it forcibly so as to destroy their webs. For the scale dissolve half a pound of softsoap in a gallon of boiling water, adding half an ounce of washing soda and a wineglassful of petroleum, and either churn with a force pump or place in a 2-gallon stone bottle, cork, and agitate violently for five minutes, then add enough hot water to make 4 gallons, mixing thoroughly. When cooled to 90° to 100° apply with a fine-rose syringe, or an apparatus with a spraying nozzle, keeping the mixture well stirred while it is being applied. In each case repeat at intervals of a few days, washing with clean water at least once between the applications. Cut away the wood which has borne fruit to the shoot at the base intended to fruit next year unless the wood is required for extension. Remove all superfluous shoots, and keep laterals closely stopped. The borders should be well watered, affording liquid manure to weakly trees.

*Houses of Ripening Fruit.*—Cease syringing trees with the fruit ripening, but provide moisture by damping until the fruit is ripe; even when ripe an arid atmosphere must be avoided. Supply water at the roots liberally. Great care is necessary in gathering Peaches, as the least pressure makes a mark and spoils their appearance. A piece of wadding may be held in the hand, and the fruit removed with gentle pressure, but experts take the fruit in the ball of the hand and bring to the fingers to act evenly on the base, and so remove it gently. Peaches and Nectarines keep best in a sweet, cool, and airy fruit room after they are gathered.

*Trees Swelling their Crops.*—When the stoning has been completed the trees will bear strong heat without fear of the fruit falling. Trees carrying full crops should be supplied with nourishing food, either as top-dressings that act quickly, as dissolved bones and powdered saltpetre, say five parts superphosphate and three parts nitrate of potash, with one part sulphate of lime, mixed, using a quarter of a pound per square yard after the soil has been made moist, and after applying the manure wash it in moderately. House sewage is excellent if it is properly diluted, also stable and cow house drainings diluted with at least five parts of water. Red spider must be kept down by syringing twice a day in fine weather. Ventilate early, keep through the day at 70° to 75° artificially, and 80° to 85° with sun heat, and close sufficiently early to increase to 90°. This, with plenty of moisture in the house, will insure large fruit, and if ventilation be given before nightfall no disaster will arise, provided more air is admitted sufficiently early in the morning to allow the foliage and fruit to warm equally with the atmosphere. Keep the fruit with its apex to the light, laths across the trellis will admit of this being done perfectly.

When the fruit approaches ripening cease syringing, admit air freely, and maintain a night temperature of 60° to 65°, that being sufficient in the daytime when dull. If the sun be very powerful, a slight shade over the fruits commenced to ripen will prevent their being ripened too quickly at the apex, whilst the base remains quite hard. Paper shades over the individual fruits are best. If it is wished to accelerate the ripening the temperature should range 70° to 75° by day, and 10° rise from sun heat.

*Fruit Stoning.*—During this important stage it is necessary to avoid a close atmosphere, and to keep as uniform a condition of temperature and moisture as possible. Maintain a steady temperature of 60° to 65° at night and on cold dull days, 5° to 10° advance with a little sun, and the usual still further rise of 5° to 10° at closing time from sun heat. Avoid sudden fluctuations of temperature and cold draughts, and keep the soil in a duly moist but not saturated condition. Do not permit fruits to stone that must be removed afterwards, but reduce the number in good time. Pinch gross growths or remove them altogether, and aim at an equal distribution of growth and vigour throughout each individual tree.

*Succession and Late Houses.*—Thin the fruits to a few more than will be required for the crop, retaining the most perfect in shape, largest, and best placed, allowing about a fruit to each square foot of trellis covered by the trees. Train the wood thinly, reserving a shoot at the base of the current fruiting branch, stopping the growths on a level with or above the fruit at two or three leaves. Side growths on extensions not required for furnishing the trees may be stopped at two or three leaves to form spurs. These spurs usually set and swell fruit when the strong growths on young trees do not. Syringe twice a day in fine weather, but on dull days damping will be sufficient, with an occasional forcible syringing to keep down red spider. Inside borders will require water at weekly or fortnightly intervals, according to their proportions, supplying liquid manure to weakly trees. A light mulch of lumpy manure will keep the soil more uniformly moist, and encourage surface roots without excluding air.

**Melons.**—Every available house, pit, or frame will now be utilised, or they should be at once to afford a supply of fruit in late August or September. Plants that were raised some time ago should be placed out, and they will make growth rapidly and set their fruit with very

little trouble. Where there are no plants and frames are at liberty, a last sowing should be made for growing in manure-heated pits or frames. It is advisable to make the beds at once, or at the same time the seed is sown. Sow the seed in 4-inch pots half filled with soil, placing one or two seeds in each, with a pane of glass over the pot. Remove the glass when the plants appear, and place a little soil around the stems. When the bed is ready put one plant in the centre of each light, planting within half an inch of the seed leaves, with the soil inclining from the stem, firming the soil well, give a good watering, and shade from bright sun. Pinch out the point of the leader at the second rough leaf, which will induce side shoots; reduce these to four, take two to the front and two to the back of the frame, rubbing off all the laterals to within 4 or 6 inches of the stem all round, and every other lateral upon the primary shoots, stopping these about 9 inches from the sides of the frame.

**Cucumbers.**—When the night temperature can be kept from falling below 65° fire heat may be dispensed with, much being effected by husbanding the sun heat and closing early. Continue to look over the plants twice a week, well thinning the old growths, and train young in their place. Avoid overcrowding and overcropping, and remove the fruit when fit to cut. Supply liquid manure copiously twice a week, and surface dress with lumpy loam occasionally. Sprinkle the bed occasionally with horse droppings, but be careful not to overdo it, or the foliage will suffer irreparable injury. Syringe on clear days in the afternoon only, but keep a good moisture in the house all day long by damping surfaces as they become dry. Morning syringing is often the cause of much injury, and if practised at all it should be done early and lightly. Promptly shade on bright weather succeeding a dull period, but at other times only to prevent flagging. Ventilate early, but avoid draughts, and never admit air to lower the temperature. Keep through the day at 75° to 90° as the force of the solar heat dictates, but in bright weather between 80° and 90° should prevail in the house from 8 A.M. to 6 P.M. Close early so as to increase to 90°-100°, and admit a little air before nightfall as a safeguard against condensed moisture, and increase the ventilation from seven to eight o'clock on sunny mornings.

*Pits and Frames.*—Unless the weather prove cold night coverings will not be necessary; if put on it must not be until the sun is off the lights, and it should be withdrawn early in the morning. Commence ventilating at 75°, and increase with the sun's advance, keeping through the day 80° to 90°, closing at 3 to 4 P.M., then sprinkle the foliage, and after being closed for an hour or two admit a little air at the back of the lights to allow of any pent-up moisture escaping. Water will be required about twice a week, and weak tepid liquid manure may be given occasionally, keeping it from the foliage and fruit. Attend to the plants once a week, stopping the growths about one or two joints beyond the fruit, removing bad leaves and exhausted growths. If the plants show signs of exhaustion top-dress with lumpy loam, and layer some of the younger shoots at a joint from which roots will be freely emitted and strengthen the succeeding growths, so that the plants will continue to produce clean fruit for a long period.

### THE FLOWER GARDEN.

**Sub-tropical Plants.**—Most flower beds and borders will be filled ere this, but the efforts at beautifying a place ought not always to be confined to these details. Instead of keeping the houses crowded with plants which very few people care to see during the summer months, some of them should be transferred to sheltered nooks. Many an interesting corner might thus be rendered attractive. Strong plants of Musas, large specimens of Latanias, Chamerops, Seafortthias, and other comparatively hardy Palms, tall Cordylines or greenhouse Dracenas, Acacias, Cyperuses, Ficus elastica, Arundo donax, and the variegated form of Caladium esculentum, Yuccas, Aloes, and such like are all more less well adapted for this purpose. Shade is not indispensable, but many of the plants like a moderate amount of it, and these may thus be grouped where flowering plants would fail. Planting out is not recommended, the better plan being to plunge the pots to the rim. Extra good plants are most effective quite by themselves plunged in the turf in some sheltered nook, the others being very thinly grouped in somewhat similar positions. The tallest of the Cordylines and Musas would be best disposed in shrubberies where they could be seen with only the upper part of their stems exposed. Most of them, if kept properly supplied with water, could be returned to the houses in the autumn before severe frosts damage them, and would then be available for the next season.

**Greenhouse Flowering Plants.**—Some of these might also be utilised for the adornment of pleasure grounds. Fuchsias invariably thrive well in the open, oftentimes after they have refused to do so under glass. If it is desirable to save the plants for another year plunge the pots to the rims in the turf. Standards are very effective as "dot plants" in beds of Begonias, while these, pyramids and bushes, may also be placed in groups on the lawn by plunging the pots. If kept well supplied with water and liquid manure they will flower grandly till the autumn. Cannas are very effective in masses, and continue flowering throughout the summer. These may either be plunged or planted out. Erythrina crista galli attracts far more attention than it does under glass. A mass is very effective either planted out in a bed or plunged in the turf. Hedychium Gardnerianum again grows very sturdily, and flowers grandly in the open; and if plunged in pots can be moved when getting shabby, and some other plants take its place. Pyramids of Ivy-leaf Pelargoniums treated similarly to Fuchsias are very effective, and the same may be said of trained Pelargoniums generally, and also Heliotropes. Large Celosias or feathered Cockscombs



plunged in the turf in July are very showy, and even the ordinary Cockscombs, turned out after they are nearly or quite fully grown, last for a long time.

**Mulching Flower Beds.**—During hot and dry weather there is every inducement for the watering pot and hose to be freely used, and this not always to the advantage of the plants. Very often a light watering applied in the evening is all that is needed, the soil though dry on the surface being quite moist enough underneath. Constantly drenching the ground with cold water greatly impoverishes it, and many plants do not thrive well under such conditions. A light surfacing of common salt, stirred in with a small Dutch hoe or a pointed stick, would make many soils more retentive of moisture, also proving a good manure when washed down to the roots, and ought to be tried. In most cases a mulching of either old Mushroom bed refuse, leaf soil, well decayed tanner's bark, fine peat, cocoa-nut fibre refuse, or even fine dry soil would conserve the moisture in the beds and obviate the necessity for watering so frequently. Especially ought Tuberous Begonias, Verbenas, Fuchsias, Violas, and Calceolarias to receive this attention. First give the beds a good watering, unless fortunately a soaking rain falls opportunely, and the next morning lightly stir and level over the surface with a flat hoe, and then apply the mulch, the whole of the bed being covered with a moderate thickness of it. This mulching may not wholly do away with the necessity for watering, and should the weather continue dry and hot the soil ought to be probed occasionally, and water given when needed.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### THE WEATHER AND BEES.

THE weather continues warm and sunny, but there is a harshness in the atmosphere which tells alike against bees and plant growth, aggravated by the myriads of garden pests. We had a fine shower at the beginning of the week, but more rain is wanted. The bees are searching for honey, but owing to the drought and paucity of flowers are not gathering it in great quantity. In a few days the Clover will be ready; then, as the hives are in good condition, they will, if the weather is suitable, work effectively. We are not the most favourably situated for keeping bees, but are well stored with honey. A few miles further up the Clyde ordinary hives in April increased in weight 40 lbs. First swarms are getting strong, so are some of the early after swarms—a great advantage near the Clover season.

#### SUPERING.

This will be the order of the day to a greater degree than we are accustomed. It must be borne in mind that bees will not take to supers till the body of the hive is fully occupied with bees, brood and food. It is of no use putting on supers till then, and honey is plentiful. When that is the case do not delay a minute. One of our old and successful plans to induce bees to enter supers was to add a nadir for several days, then take it away, and at the same time put on the super or supers, for with strong hives we usually put on two and even three at a time; then after the bees had the supers well begun either a combed division was put under again or the one recently removed. In olden times when there was no foundation the white combs made in the nadir were employed as guides to supers, or if the temporary nadir was a super it took its right place. Admittance of course was given at the sides of the hive only, and it was a rare thing to see brood in supers.

#### THE CLOSE-FITTING DIVIDER.

My contrivance was used in large frame hives. After allowing the bees full scope to the dozen frames containing twelve superficial feet of double-sided combs, one or two frames were removed, supers put on crowding the bees into them. After they had well started them the frames recently taken away were added. This manipulation was one of the best to delay or prevent swarming, but let no reader of this *Journal* believe that swarming can be absolutely prevented, for it cannot. Bees swarm because it is natural for them to do so, while they make preparations about a week or more before it takes place.

#### RETURNING SWARMS.

Do not return swarms unless they be after swarms not wanted, for assuredly they will swarm again, but transfer the supers with bees and combs from the old stock to the swarm. An answer of mine to a query was contradicted in a contemporary. It was, that when the swarm took the place of the old stock the bees of the latter would not enter the hive of the former unless it was taken a long distance away or shut up inside. In this case there would

be no bees flying to go back, while the moment a swarmed stock hive is handled the bees seem to know it, and keep up a continuous humming and fanning to draw the attention of bewildered returning bees. They then immediately mark their new site, and return to it as unerringly as they did to the old one. Of course, a theorist who writes on bees and a practical bee-keeper are as distinct from each other as are the different journals.

#### DIFFERENT SHADES OF POLLEN.

The bees are busy gathering pollen from the *Thalictrums*. It is very interesting watching them on these plants, as it is easy to see the different hues upon their legs, varying from light brimstone to dark orange from the same plant, a change probably due to the saliva of the bees being more acid in some than others.—A LANARKSHIRE BEE-KEEPER.



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Campanulate Foxglove** (*J. H. W.*).—Yes, the "freak has come under our notice before." Allusion was made to an instance in last week's issue of the *Journal of Horticulture*, page 469, to which you may with advantage refer.

**The Home of the Tomato** (*Beulah Spa*).—It is a native of South America, probably Peru, but is found wild in Mexico, Brazil, and the Southern States, also in the East Indies, whence it was supposed to be taken by the Malays. It was introduced to this country in 1596.

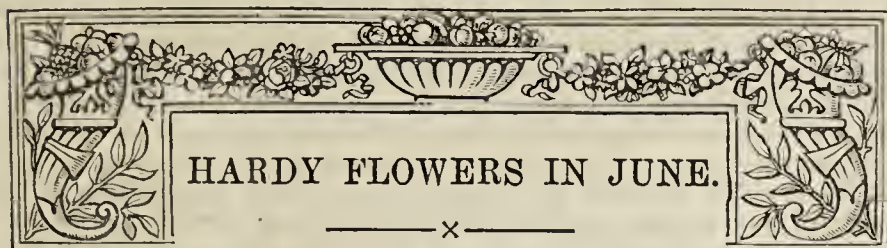
**Insects on Plums** (*S. H. Stott*).—Aphides are increasing rapidly on fruit trees and bushes. It is important that timely measures be taken for their eradication. Those on the Plum leaves you send are dead with the exception of one or two newly hatched, these proving the necessity of at least two applications for clearing the trees.

**Diverse Methods** (*St. Julien*).—The same end may be obtained by different routes, and similar results by differing methods, if they are pursued intelligently. Contradictions are instructive, and it is common for an apprentice to learn (if he does not already know) more than his master. We are obliged by your letter, and agree with some portions of it.

**Culture of *Fadyenia prolifera*** (*W. T. B.*).—This curious little Fern requires the temperature of an ordinary exotic fernery, or the cool end of a moist stove. It succeeds in a compost of peat and sand, with abundant drainage, a wide shallow pan being best suited for it, as the long narrow fronds can then extend freely. When the young plants are produced at the point they will soon root in the soil, and may be either separated or allowed to remain, the latter being generally preferred, as they impart a peculiar appearance to the plant. It is usually found advisable to cover the plant with a bellglass to preserve an equable temperature and moisture about it.

**Rose Cuttings Failing** (*E. C.*).—The chief cause of failure may probably be traced to keeping the cuttings, and eventually young plants, too closely covered, thus making them tender and liable to destruction by the frost, to which they appear to have been victims. When Rose cuttings are inserted in summer it is desirable to keep them close, moist, and shaded for a time, but they should be gradually inured to sun and air and be fully exposed as soon as possible in the autumn. It may be necessary to protect them in winter if the frost is severe. Thousands of Briar cuttings, also numbers of Rose cuttings, are inserted in the open ground in October, and if the right kind of wood is chosen, and the cuttings made and inserted quickly and properly, the great majority root and pass the winter with soil drawn up the stems. In gardens where only a few dozens or hundreds are put in cocoa-nut fibre refuse may be employed for protecting them. When inserted in cold frames or covered with hand-glasses they are apt to fail through being "coddled," and they should be fully exposed except during very inclement weather during the autumn and winter. You have been too kind to your cuttings, and possibly they may have been too crowded under the bell-glasses. If we knew the size of these and the number of





THE Rose has this season come earlier than usual to delight us with its beauty and fragrance, and it may seem that writing in praise of its followers is rank disloyalty. I would, however, disavow all thought of treason to this "Queen of Flowers," but would leave other pens to speak of its beauty. The proverb *ne sutor ultra crepidam* is a true one, and the many able rosarians who write in the columns of the *Journal* are more qualified to descant upon the beauty of their favourite flower than he who pens these notes. We have to devote ourselves to the humbler plants, though some of us, perhaps, in our day dreams may picture a Rose garden filled with Roses of all kinds; the old fashioned ones that have made their mark on the pages of history and which are certain to be again sought after; those that have been the origin of some quaint and beautiful legends; the rare species for which we are indebted to the indefatigable search of explorers; or, last but not least, the productions of the florist that possess a beauty which seems too perfect for the vicissitudes of this rude climate of ours in ordinary years. If, however, this garden only exists for us in our day dreams, and we are not qualified to discuss the merits and demerits of the various forms in which the Rose displays its charms, we may at least offer our respectful and admiring obeisance.

Amid the profusion of beauty which this June has adorned the garden, it is a mark of the exceeding value of the estimation in which the Rose is held that no rival can in the public mind displace it, and the many forms of floral beauty of the month have only shown its pre-eminent value. The Lily, an ancient rival, has given us the noble *L. Szovitzianum*; the bright and showy *L. davuricum*; the neat and pretty dwarf *L. elegans*, varying much in height and in shade of colour; the old *L. Martagon*; and in some gardens the chastest of all—the Madonna Lily—has delighted the observer with flowers of highest purity. Vastly inferior, yet with some merit, is the small flowered *L. pyrenaicum*, whose flowers exhale so powerful a perfume. Then could aught exceed the elegance and beauty of the many Irises or "Rainbow Flowers" which have come to give pleasure to our hearts? Bearded and beardless Flag Irises, of tall or of dwarf habit, with massive and broad or grassy leaves; Spanish or English bulbous forms, with flowers of exquisite shape, and others of a similar habit of growth, such as *I. Boissieri*, have brightened the borders and lured us to stand awhile and study the wondrous colouring which, in shades of purple, blue, yellow, white, brown, and others too numerous to detail, defies description, and laughs to scorn the attempts of the artist to transfer it to his canvas or to paper, and, in greater degree, eludes the struggle to portray its tints with the pen. Alas! that one should up to the present have to admit defeat with the *Oncocyclus* section, and that we should anew have to attempt to solve their culture—a solution only to be found apparently by trial in each garden.

If the Rose has its delightful fragrance, so, too, has the Pink, which in various forms has been one of the flowers of June, and the season has suited it perfectly, leading one to think that a few more years like this would lead to the beauty of this flower being recognised anew. Very charming have been some of these mounds of foliage covered with massive flowers of exquisite perfume, such as Mrs. Sinkins, of which an old plant with some fifty fully open

flowers has been most delightful; or others with single flowers, such as "Maiden Pinks of odour faint," or some of the rarer alpine species which have formed such pretty objects on the rockeries. How dear these old Pinks have been in days gone by may be gathered from Spenser's reference in "Amoretti"—"Her lovely eyes like Pincks but newly spread."

The Tulip has long gone to rest, but the Poppy has fallen heir to at least its brilliancy, and in many kinds has endeavoured in some degree at least, to fill its place. It is curious to see in what little estimation the Poppy is held by many, and how little its aid is sought for garden purposes. In my garden it has become fairly naturalised, and Oriental Poppies, Shirley Poppies, Iceland Poppies, Alpine Poppies, and several others come up in superabundant plenty in unexpected places. May I commend to the notice of some a word or two from Ruskin? He says:—"We usually think of the Poppy as a coarse flower, but it is the most transparent and delicate of all the blossoms of the field." I know my taste in preferring single flowers among Poppies will not be universally approved, but I submit that the single, or even the semi-double flowers are immeasurably more graceful than are those of the double varieties.

If the procession of the flowers of June has had its monarch it has also had its guardsmen, and I fancy this honour will by universal acclamation be conceded to the stately Delphiniums, which have been fitly called "princes among summer flowers." Gallant and brave they seem with their noble spikes of deep blue, light blue, or purple of varied shades, some with "dove's neck" lustre and with much variety of central eye. It is true they lack fragrance, but we do not expect our warriors to be odorous of perfume, even when on grand parade. As it is these flowers brook no rivals in their own particular sphere, even the noblest of the Monkshoods showing its inferiority in the presence of these princely Larkspurs.

A commanding place in the garden of hardy flowers must always be taken by the Campanulas, which in many forms and shades ornament the borders or form on the rockeries masses of exquisite grace. Peach-leaved, Broad-leaved, and Nettle-leaved Bellflowers in various shapes and shades seek to vie with each other in representing worthily the claims of the taller forms. *C. glomerata* in purple and in white; *C. Van Houttei*, *C. punctata*, and several others exhibit the beauty of what may be called the intermediate forms; while on the rockery *C. Portenschlagiana*, *C. garganica*, *C. G. F. Wilson*, and others in shades of purple, blue, or white testify to the incontestable right of the Bellflower to a place in the garden.

The Mulleins have also been ready to display their grace (if I may be allowed to apply this word to the beauty of the *Verbascum*), and their handsome spikes of flowers have been much admired. In my garden *V. phoeniceum* is represented in various shades and colours, perhaps the prettiest being a white one; but pretty as is this I prefer the white variety of *V. nigrum*, which is extremely handsome with its long spikes of white flowers with purple centre. A strange contradiction this of terms—yet not uncommon in garden names—of "White Black Mullein," which must I suppose be the literal translation of *V. nigrum* var. *album*—the botanical term? The only popular name I know for this *Verbascum* is the "Dark Mullein," and the name "White Dark Mullein" is far from satisfactory. *V. Thapsus* might well spare one of its popular names to this species. Other fine *Verbascums* are worthy of note, but many other plants must have at least passing notice.

Great Sea-Thrifts have been crowded with heads of flower; Stonecrops, with thick and fleshy leaves, have covered themselves with yellow flowers of brilliant hue; the old Moly (*Allium*) has lit up a border with its golden blooms; the pretty pink *A. falcatum* has shown its pleasing flowers, which, alas! are of unpleasant odour; Sun Roses and Rock Roses have displayed their fleeting charms; tall and dwarf Linarias or Toad Flaxes have covered the



rockeries with dense carpets, pleasing tufts, or have uplifted their pretty spikes in the border; the white *Sidalcea candida* has been admired with its Mallow-like flowers in long erect branches; *Linum flavum* with shining yellow blossoms, and many other flowers have proclaimed with no uncertain sound how lavish flowers are in responding to the care of him who loves them truly, and finds delight of the sweetest kind in their company.

One could speak and write for long enough of the many more in flower, but I am aware that Rose shows and other claims will press sorely on the space of the Journal, and I have no desire to deprive rosarians of their due, but hope they have been and still are enjoying the fruits of their anxious care in reaping a rich harvest of beauty.—S. ARNOTT.

### THE WATER SUPPLY OF OUR GARDENS.

A PERIOD of prolonged drought like the present one brings to our minds with irresistible force the advantage, nay absolute necessity, of providing gardens of all descriptions with a plentiful supply of water. It seems to me that it is only at such exceptional times that we fully realise how much we are dependant upon water as a prime factor in the achievement of cultural success in any department of gardening. No matter how well all other details of culture are attended to, a scarcity or too stinted use of this indispensable element brings to the level of mediocrity the work of able cultivators, who with plenty of water at command, would be skilful gardeners. In many instances it is painful to see the looked-for reward of long hours of labour, snatched as it were from the grasp of the cultivator whenever a temporary absence of rain occurs at a period when various plants and crops have reached that critical stage of their growth at which copious supplies of water make all the difference between success or failure.

These thoughts and lessons have again been brought forcibly to my mind by visits to gardens of many descriptions, and by a quiet walk among allotments in various localities. The great contrasts presented in the appearance of these must leave upon the minds of many, beside myself, a vivid impression not soon to be forgotten. In some allotment gardens the sight was pitiful to behold, as no provision whatever had been made for a supply of water, and they were situated too far from the homes of the cultivators or other sources of supply to enable them to water even on a limited scale. The result was that hundreds of plants which had been set out after a few slight showers were either dead or dying, while other plots of ground which, during ordinary seasons would have been fully occupied, are yet practically barren wastes, the occupiers having recognised the uselessness of planting or sowing in soil almost as arid as the desert sands when no water is within reach. Among so much that was depressing one promising feature, however, stood out clear and bold, viz., the absence of weeds, and general tidiness which prevailed. Surely there never was such a splendid season for ridding our gardens of weeds, and it augurs well for the future to see cultivators on all sides taking advantage of it.

It was pleasant to turn from the parched and barren garden plots above referred to, to a group of others laid out within easy reach of the river Avon. Through being thus close to the water the soil was no doubt cool and moist in comparison to that in more elevated situations, but in addition to this advantage there were unmistakeable evidences that the river water had been freely used. Although no special provision had been made for conveying it to the crops, water carts, buckets, and cans were being pressed into service at the time of my visit, with an amount of energy not easy to excel. The work was without doubt very laborious, but the results achieved in keeping young crops advancing steadily, instead of gradually dwindling away or dying outright, seemed to give the owners ample satisfaction even now; but the advantage thus gained will be even more apparent later on when the crops which are receiving timely attention approach to an early maturity.

Numerous private gardens both large and small at the present time differ quite as much in appearance as those previously mentioned. Speaking broadly, this difference may be fully accounted for by the facilities which exist in each for the supply and distribution of water. The gardener who is well equipped in this respect has no dread of the approach of drought; on the contrary, he knows it to be a time when his productions show up with conspicuous advantage by the side of his less fortunate neighbours. How often have we wished in vain for a

spell of bright sunny weather, for the lack of which our English climate has been frequently abused. Now, however, that we are having sunshine enough to satisfy the most chilly person we find the water supply of our gardens has heretofore received too little attention, for it is an undoubted fact that were we to receive the amount of sunshine the majority of individuals crave for, our usual rainfall would be totally inadequate. It is also true that given a fertile soil and an unlimited supply of water, the county which receives that greatest amount of sunshine brings to maturity the heaviest crops. The rainfall of Britain would therefore require to be doubled in order to enable us to mature the fullest crops our soil and climate are capable of producing during seasons like the present one, lack of moisture being the one thing which now limits production. This view is fully supported by the experience and observation of the writer, and may be made equally apparent to anyone who will mark the distinction between plants and crops which are now receiving as much water as they require and those only receive comparatively a very limited amount, no matter whether we seek our illustration in the flower or kitchen garden, plant house or vinery. In every instance the season has been a grand one for the production of superior results where water has been copiously used, and I shall look forward to seeing both fruits and vegetables in high-class condition at many of the approaching shows.

One word about water in connection with the germination of seeds. On all sides I hear complaints about the patchiness of seed beds, and the disappointment resulting from the failure of seeds to germinate. I doubt not that many seedsmen will be inundated with complaints respecting the quality of the seeds supplied, but the real cause of failure must decidedly be attributed to the dryness of the soil in which the seeds were inserted. With us seeds of all descriptions have never come better, as we are happily situated in regard to a water supply, and were able to give every seed bed a thorough soaking with water just at the critical stage. Having at various times contended with the drawback of an insufficient supply, we are able to appreciate our present fortunate circumstances in this respect. I hope that the lessons taught by this sunny season may be the means of bringing about a vast improvement in the water supply of hundreds of British gardens, knowing well that the energy and skill of many gardeners are sadly hampered by having in use only primitive methods of distributing water, notwithstanding the fact that the hydraulic ram of present times is a powerful and economical invention for effectively performing that work.—H. D.



MAXILLARIA SANDERIANA VAR. XANTHOGLLOSSA.

As will be seen by the illustration (fig. 89), this is a very fine variety of *Maxillaria Sanderiana*, and when exhibited by Messrs. F. Sander & Co., St. Albans, at the meeting of the Royal Horticultural Society on April 25th, an award of merit was adjudged for it. The flower is large and showy, the sepals and petals being white densely spotted with crimson, deepening to a dull reddish shade in the centre. The frontal portion of the lip is fimbriated, and a pale yellow shade. It may be interesting to remind readers that the type was first seen in flower at the Orchid Conference in 1885, and was then considered one of the most beautiful Orchids in cultivation. The variety depicted, however, is an improvement on the flowers of the species.

### TEMPERATURE FOR MILTONIA VEXILLARIA.

ALTHOUGH many growers succeed with this charming Orchid in the cool house there is no doubt that better results are frequently attained by giving it as high a temperature as most *Cattleyas* require; but perfect cleanliness and good drainage are essential. The first is secured by a constantly moist atmosphere, frequent examination for black thrips, and spongings if necessary; the second by filling at least two-thirds of the pot with crocks, and using only the very best peat, from which all the earthy particles have been shaken away, in the compost. This should consist of the above and live sphagnum moss, with a few nodules of charcoal added. The plants must be elevated 1½ inch above the pots, and careful watching is necessary in winter to prevent the decay of the base of the pseudo-bulbs from over-accumulation of moisture.



## VENTILATING ORCHIDS.

No doubt "J. E." (page 474) is right in supposing that the Orchid houses he refers to are insufficiently ventilated. The practice of leaving a house of Orchids of any kind closed until the temperature reaches a certain limit is decidedly wrong, especially at this season of the year, when a little air should always be admitted day and night.

With regard to the *Odontoglossum* house the day treatment is right, both as to shading and ventilating; for with the temperature outside at 80° or more it is little use having the ventilators wide open, as this only causes a dry atmosphere. Anyone experienced in the culture of cool Orchids has no need to look at the thermometer in summer. If the house feels pleasantly cool and moist on entering from the external air one need have no fear on that score. A good test, too, of *Odontoglossums* and kindred plants is to pass the hand lightly over the foliage. If this is firm, rustling to the touch and springs back readily to its place when the hand is removed, all is well; but if on the other hand it is soft and flabby, then the sooner the plants are given more air and less heat the better. At night abundance of air can be left on, unless the wind is very rough, for it is impossible to keep the plants too cool for the next two or three months. After the end of August the night air must be gradually reduced, but it will seldom be found necessary to quite close the bottom ventilators if these are either opposite to or just below the hot-water pipes.

The *Cattleyas* will not require so much air at night as the *Odontoglossums*. Where the lantern system of ventilation is in vogue and the air is admitted the whole length of the house, an inch on warm nights, and half an inch if there is much wind, will suffice. The grower must be guided by the weather by day as to giving air and shading. For *Cattleyas* the blinds should be kept up a little while after the air is increased in the morning, but not long enough for the leaves to get too hot. One day the sun may do no harm if allowed to shine on the leaves for a couple of hours, while another day half an hour's sun would scorch the leaves and disfigure the plants for years. This is especially the case after a few dull days, or after a thunderstorm, when the air is clear and the sun bright. Watch the plants when the leaves begin to feel warm to the touch, then lower the shading, but not before.

For a mixed house of Orchids it is difficult to give any definite instructions as to ventilating and shading, so much depends on the plants that are grown. For example, take two well known Orchids that are often seen growing in the same house—viz., *Dendrobium nobile* and *Cœlogyne cristata*. The former can hardly have too much sun if there is plenty of moisture in the atmosphere, while the latter cannot be better placed than in a shady corner.

It must be evident to "J. E." that no specified time can be given for airing or shading, but a well balanced atmosphere as to heat, air, and moisture should be always maintained. Then by arranging the plants in suitable positions according to the wants of the various species and the different stages of their growth many of the difficulties of a mixed house will be overcome.—H. RICHARDS.

## ORCHIDS AT SUNNINGDALE PARK.

For a collection which was formed only two years ago this is a very fine one. Many species and varieties are cultivated, and almost without exception the plants are in the best of health and vigour. A range of glass has been built expressly for Orchidaceous plants, and it is in a great measure due to Mr. Joicey, jun., who is a veritable enthusiast among Orchids, that such an excellent selection has been obtained in the limited time. During the time that this gentleman was travelling abroad he very kindly sent home upwards of a thousand plants of various kinds, many of which were at the time of my visit making such growth as an Orchid lover delights to see, the foliage being clean and substantial. One cannot be surprised at a gentleman taking an interest in them when he has such a hard-working and conscientious gardener to look after the plants as is found in Mr. Thorne.

Amongst the most noticeable in flower were *Oncidium Gardneri*, *Epidendrum radicans*, an exceptionally fine plant, *Oncidium pulvinatum*, which has a grand spike smothered with its starry yellow flowers. Some very beautiful varieties of *Cattleya Mossiae* were to be seen, and also some *Cypripediums*, amongst which a seedling of Mr. Thorne's own raising was decidedly pre-eminent. *Angulor Clowesi*

and *A. Ruckeri*, were very good, *Sobralia macrantha* in grand form, *Vanda Batemanni*, and a very dark form of *Cypripedium barbatum*. But the feature which reflects the greatest credit on the grower is a group of *Miltonia* (*Odontoglossum*) *vexillaria Cobbiana*. The plants in 4½ and 6-inch pots are arranged in a low lean-to house facing due east. Many of the plants have over forty blooms on them, and the colours range from an almost pure white to a rich deep rose. I measured a bloom on a plant in a 6-inch pot carrying eight spikes each with six flowers, and found it to be 5¼ inches in depth and 4¼ in width.

There were many other things at Sunningdale Park, to which I will refer in an early issue of the Journal.—W.

## THE ROCKERY IN MAY.

SURELY never have things been turned so topsy-turvy in the domain of horticulture as they have been this year, and in no part more so than in the herbaceous and alpine plants, which have



FIG. 89.—MAXILLARIA SANDERIANA VAR. XANTHOGLOSSA.

been so largely grown of late years, a fact to which the Temple Show bore ample testimony. I do not think that the plants have as yet suffered much. It has, however, decoyed them in their time of blooming, and we are seeing things in flower now which we should look for in ordinary seasons a month hence, while those which we have looked for at this season are long since past. In looking over my small rockery during the latter days of May I found the following plants doing well, and as some of them are sometimes difficult to grow I may here state my method of treating them.

*Onosma tauricum*, I believe, is a difficult plant to flower in cold or damp situations; I know that in the climate of Cheshire it is almost impossible to keep it, much less to get it to bloom. I have placed it on an elevated position in the rockery and there it has stood unharmed during the severe winters we have had of late years. It is a very striking plant with its long pendant racemes of yellow blooms which are freely produced and last a long time in flower. I do not think that I have noticed in any descriptions of this plant the peculiarly strong almond perfume emitted by the blooms, and which my daughter brought to my notice. Inhabiting as it does the Caucasus, in high altitudes it is perfectly hardy, and I imagine like many plants of a similar character it suffers more from damp than cold, and perhaps from the varying character of our winters.

Nothing more surprises visitors who do happen now and then to visit my garden than to see *Gnaphalium leontopodium* flowering. They have been so accustomed when visiting Switzer-



land to have it associated with the inaccessible crags of Alpine ranges that they are quite surprised to see it flourishing. It is perhaps for these associations a somewhat overrated plant, though there is a great beauty about its soft flannelly foliage and flower stems. My clump is several years old, and the plants were raised from seed gathered here. There are many varieties of Aubrietias, the best of them being seedlings from *A. græca*. But none of them is comparable in beauty to *Aubrietia Leichtlini*, raised by the distinguished hybridist, Herr Max Leichtlin. It is quite as vigorous as the type, and is of a beautiful rosy pink colour, the buds as they open being nearly crimson.

*Gypsophila repens* is a pretty little white-flowered trailing plant, running freely over the rockery, and very useful for cutting for small vases. After many unsuccessful trials of *Campanula pulla*, which is in many places almost a weed, I have succeeded in establishing a good clump of it, which I obtained from my friend Mr. Carrington-Ley, on a piece of rockery facing east. Its deep purple flowers, borne on slender stems, make it a very pretty object in the lower part of the rockery; but care must be taken that larger plants do not interfere with it.

*Dianthus alpinus* is one of the most charming of alpine plants, with dwarf bright green foliage, which is, however, entirely covered when it is in flower, the flowers being of a bright rosy pink  $1\frac{1}{2}$  to 2 inches in diameter. *Dianthus neglectus* is a bright pink flower, produced on stems from 4 to 6 inches high; but some doubt appears to exist as to whether what is known as such in the trade is the real *neglectus*. *Dianthus deltoideus* is one of those rock plants which the grower will have to watch very closely, not because it is delicate, but for the very opposite reason. It is so robust, and so increases by underground growth that it is apt to spring up in all places and smother other plants. *Dianthus cæsius* is the well-known Cheddar Pink; a native plant, very fragrant, and easily grown. *Dianthus fragrans* may be called a dwarf single form of the common white garden Pink—like it, the petals are deeply serrated, and the flower is very fragrant.

*Cypripedium spectabile* being in flower at the end of May is a remarkable proof of the earliness of the season, for I have seldom had it blooming before the end of June. I had also feared the drought would have considerably injured its vitality as it is essentially a moisture-loving plant, but I am glad to find that this is not the case, and that my clump, which I have had now for ten or twelve years, has flowered well. Its white flowers with the rosy labellum make it a conspicuous object on the rockery, and always attract the attention of visitors.

*Campanula turbinata* is a well known dwarf free-flowering species, comprising many varieties very easy of culture, in fact quite taking care of itself. The flowers are sessile and large considering the dwarf character of the plant. Many of the *Saxifragas* are noticeable for the beauty of their foliage, others for their huge panicles of showy flowers, but I know of none of them which for the delicacy of its pencilling equals *Saxifraga MacNabiana*.

The long period of drought seems to have suited *Semprevivum arachnoideum* admirably, wet weather to a great extent destroying the beautiful webs which cover its surface; indeed, it does not seem to mind how much it is baked. I recollect finding it in the clefts of some rocks on the Mauvais Pas near Chamounix, where it was fully exposed to the blaze of the sun, and did not seem to have a morsel of earth in which to root, so that this summer it has been quite at home.

*Omphalodes Luciliæ*, whose flowers are the most peculiar shade of blue, unlike that of any other plant I know, does not seem to be one very easy to manage—not that I lose it, but the plant does not seem to increase in size, and it is most difficult to propagate by division of the roots, at least I have found it so. I tried it once, and it was a most egregious failure. Another defect which I find in this beautiful flower is the smallness of the trusses, as I can never get more than three or four blooms out at the time.

*Heuchera sanguinea* has again flowered, but not at all in the way in which I am told by some of my brother gardeners it does with them. I was advised by somebody (I think it was Mr. Cocker of Aberdeen) at the Temple Show to break it up after it had flowered, and immediately replant the crowns. I was not to mind the flagging of the plant under the process, as it was its too great luxuriance under cultivation which prevented its flowering, as it does in the wild state. There may be something in the theory, and at any rate I mean to give it a trial.

Such is the record of my small rockery in the month of May of this year. Of course, it is not such an one as I should have in ordinary seasons, for many things have prematurely passed out of bloom; but it will be seen that even in this exceptional season there are some things to interest and please.—D., Deal.



#### ROSE SHOW FIXTURES IN 1893.

- June 24th (Saturday).—Reigate.
- „ 26th (Monday).—Canterbury and Hitchin.
- „ 27th (Tuesday).—Maidstone and Sutton.
- „ 28th (Wednesday).—Clifton,\* Earl's Court, King's Lynn, and Richmond (Surrey).
- „ 29th (Thursday).—Eltham and Windsor.
- July 1st (Saturday).—Crystal Palace (N.R.S.).
- „ 4th (Tuesday).—Bagshot, Diss, and Gloucester.
- „ 5th (Wednesday).—Croydon, Ealing, Farnham, Hereford, and Lee.\*
- „ 6th (Thursday).—Bath, Farningham, Manchester, and Norwich.
- „ 7th (Friday).—Ulverston.
- „ 11th (Tuesday).—Harleston and Wolverhampton.†
- „ 12th (Wednesday).—Earl's Court and Tunbridge Wells.
- „ 13th (Thursday).—Workshop (N.R.S.), and Woodbridge.
- „ 14th (Friday).—Helensburgh.
- „ 15th (Saturday).—New Brighton.
- „ 20th (Thursday).—Bedford and Trentham.
- „ 25th (Tuesday).—Tibshelf.
- „ 27th (Thursday).—Halifax and Southwell.
- „ 29th (Saturday).—Bedale.

\* Shows lasting two days.

† Show lasting three days.

During the present month a list of Rose Show fixtures will be issued each week, so that I shall be glad to have early notice of the dates of any shows not mentioned above, and also of any change of dates.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

#### TRAIN ARRANGEMENTS FOR THE NATIONAL ROSE SOCIETY'S PROVINCIAL SHOW AT WORKSOP, JULY 13th.

THE 10.40 P.M., out of King's Cross, Great Northern Railway, on July 12th, is to have a special van for Rose boxes, and will stop at Hitchin. The 5.15 A.M. will take up at Retford, and have a van from there for convenience of those coming from the North. This will enable exhibitors to get to Worksop at 8.31. The 7.15 A.M. is to have a special van.—J. MALLENDER.

#### THE OLDEST ROSE TREE.

IT interested me to see in last week's *Journal of Horticulture* (page 420) a note about the old Rose tree at Hildesheim, and I thought it might interest you to see the accompanying photograph, which I brought from Hildesheim in remembrance of my visit (in 1882) to the Cathedral there, and to the "oldest Rose tree" in the world. Unfortunately I did not see the tree in bloom, as it was too late in the year, but we were told it had been a perfect picture that year, so covered was it with blossoms.

The tradition, as I was told it in Hildesheim, was that the King while hunting in the forest, lost a precious relic, and vowed if he found it he would build a church on the spot. It was found caught by the chain on a Rose bush, and he built a chapel there, so that the Rose tree grew against the wall. The chapel being added later on, became the cathedral, and certainly is of much older date than the rest of the building. I think the King who founded it was not Charlemagne, but his son Louis the Holy, as he was called.

The stem of the Rose is of great size, and has had to be fenced in with a high iron railing to preserve it and the tree from the depredations of tourists. This is nothing in the way of information, but I thought it might interest you to see the photograph.—MABEL MAJOR, *Cromwell House, Croydon.*

[We are obliged by the photograph, which is, however, not suitable for reproduction, and for Miss Major's interesting communication.]

#### THE PRAIRIE ROSE.

RECENTLY garden literature has much to say of the beauty of the wild single form of this American Rose. It has been long cultivated in the nurseries of the conductors of "Meehan's Monthly," and they can bear testimony to the special beauty of this species. It comes into flower just as the ordinary garden Roses are going out, and before the autumn Roses appear, and the flowers, though each comparatively small, are borne in such immense clusters that the effect from the beauty standpoint is very grateful.

One singular point about the Rose is that when found growing wild north of the Potomac, as it often is—indeed, the specimens under cultivation as before cited are from Pennsylvania plants—they seem to be perfectly sterile, never attempting to make any seed, and for this reason no opportunity has been afforded to endeavour to improve the race by seed; but it must produce seed further south, as the Baltimore Belle and Prairie Queen were raised in Baltimore from these wild plants by the late Mr. Samuel Feast. In native localities further south it seems to produce seed freely; at least, the writer of this noticed it producing seed abundantly in the cave regions of Kentucky and round the Kahokia mounds in Illinois, near St. Louis.



## ROSE, DUCHESS OF BEDFORD.

I HAVE to express my obligations to Mr. Harcourt P. Landon for the information he gives me on page 480 of your issue of last week. I find that regarding the origin of Rose Duchess of Bedford there is a very considerable and conflicting difference of opinion existing between the great British rosarians. In his list of 2000 distinct varieties, Mr. Cranston of Hereford attributes the origination of this, one of the most beautiful and brilliant Roses in cultivation, to the Waltham rosarian. It is on the other hand assigned to Mr. R. B. Postans by Mr. Cant of Colchester, who being an intimate personal friend of Mr. Paul is not likely to deprive that venerable Rose cultivator of any honour that especially belongs to him. That Mr. Paul was at least the first introducer and extensive cultivator of the Duchess of Bedford I cannot doubt. This continental fame does not, most fortunately, rest upon the Duchess, or even upon the more celebrated Duke of Edinburgh, the latter of which was unquestionably raised by him in 1868.

Next to Mr. Paul among British raisers I would place without hesitation the late Mr. Bennett, to whom we are indebted for Her Majesty, Mrs. John Laing, and Lady Mary Fitzwilliam. The last mentioned Rose, however, is entirely eclipsed, whether as regards form, substance, exquisite colour, or superb fragrance, by her more highly endowed daughter "White Lady," a Waltham production. Like Mr. Turner's Polyantha Rose, whose success at Paris is extremely gratifying, it is a production of inestimable importance.—DAVID R. WILLIAMSON.

P.S.—Since writing the above note on the Duchess of Bedford I have received a letter from Mr. Paul, in which he says that the Rose in question was raised by Mr. Postans, but popularised by him. I am glad to have such an authoritative decision upon this subject. Mr. Paul, as I have indicated, does not require the Duchess to add to his reputation.—D. R. W.

## STRAY NOTES.

"My attention has been called" to a statement in London, and even in Dublin, evening papers to the effect that "the well-known grower of Roses in Suffolk, Mr. ——— (Christian and surname given in full) was deceased." As a matter of fact, the person in question, who has thus had a very rare opportunity of tasting posthumous fame, is alive and—well! would be "kicking" if due reason and a fit and proper object for that exercise could be shown him.

The drought increases in intensity. We are now contemplating hanging Professor Falb for an opposite reason, for he said we should have rain in June. The heat and the glare, and the "sharp dry," as it is locally called, of the east wind are trying for Hybrid Perpetuals and even for some of the Teas; and Rose showing must be a most vexatious and trying business in such weather. I am very pleased to see that Mrs. Paul (Bourbon) stands it well. My blooms are as firm and lasting as they were last year. Of its companion gold medal Rose, Salamander, the same cannot be said, I fear, in spite of its name. There is ample excuse for a Rose of that class appearing flabby in such a season; but it appears to me to be also a weak grower, and it is certainly strange that I have not seen any account of its having been exhibited, even by the raiser.

They are to be congratulated who have not been driven by the past cold and wet seasons to discard slow-opening and "hot season" varieties. It ought to be a good year for Marie Rady, Reynolds Hole, and Star of Waltham among Hybrid Perpetuals; and as for Teas, with Boule d'Or, Madame Margottin, and Madame Willermoz throwing themselves open as freely as Anna Ollivier, where, oh! Page Roberts, are those Marie Guillots which were our envy and despair in days that are past?

Violet Bouyer, as usual, won the race among Hybrid Perpetuals as being the first out; a dead heat for second place between Monsieur Noman and Captain Christy (the former rejoicing in the weather and coming very good, but, alas! too early), with Mrs. Baker in close attendance as third, and the others not far behind. Margaret Dickson at present shows no signs of giving any compensation for the disappointment of last year; but the two Irish Marchionesses, who are not lacking in embonpoint, should have a good time. The Marchioness of Dufferin has come quite good with me, and probably likes this sort of weather.

I am obliged to Mr. Mawley for his ample corroboration of my anticipation that the earlier grubs and caterpillars were to a great extent destroyed by pruning. Later pests which would not be thus affected are as numerous as ever. Aphides are more in evidence than usual, the little caterpillar which disdains leaves and appears first on the well developed bud only, is the cause of some quite private remarks, and that Beast (capital B) in the shape of a white maggot, which bores its way downwards from the top through the centre of the longest and strongest shoots which have not yet shown the bud, is really enough to make one tear one's hair, for there is no discerning the mischief till it is done, and are not these shoots our only hopes for the later local shows?

Of other pests mildew is unusually early, and bids fair to do a good deal of harm. As for orange fungus, of which Mr. Abbey discourses so fully (page 481), and which formed the subject of a symposium in the "Rosarians' Year Book" for 1887 (Mr. Worthington Smith's contribution being very clear and well illustrated), I have found it

practically unworthy of notice. Full of apprehension I most carefully carried away and burnt every sign of it in 1888; but finding no benefit in the autumn, and realising the next year that it really did me no practical harm, I have since left it alone, and do not find it increase.

It does, in the secondary stage, cause a great falling of the lower leaves in autumn, the Victor Verdier race being particularly susceptible. But though this is unsightly it does not seem to me that the vigour of the plants, or their capabilities for producing first-class blooms in the season, are thereby diminished.—W. R. RAILLEM.

## CANKER IN FRUIT TREES.

FOR more than one reason it was thought desirable to defer the publication of the following communications, mainly, though not wholly, commenting on Mr. Abbey's comprehensive articles which appeared on pages 47, 68, and 98 in January and February of the present year.

I READ Mr. Abbey's remarks on the various Apple growing soils of the country, and also his comparison of the Leeds soil with the Sittingbourne soil. I think in the main his deductions are correct, and that ammonia is needed to render the iron available for plant food, which was one of the things I suggested in my first letter on this subject. One error Mr. Abbey appears to have fallen into for want of more information as to subsoil, which I would have given had I anticipated his article, for he supposes our soil is different from the Kentish rag, which grows what he calls "the large bright matchless Kent Apples," whereas it is identical, for the parish of Leeds is situated on the ragstone formation, the technical geological name of which is the Hythe beds of the lower greensand.

The ragstone range of hills, which is about three or four miles wide, runs parallel with, and situated about a mile from, the North Downs, the soil in the valley between being composed of gault and some soft sandstone. On the southern side the Weald clay comes right up to the ragstone, consequently we are able to grow such Apples as your correspondent describes and other fruits remarkably well. Hops also do well. Before coming here I spent a considerable time examining the various soils in the county and looking to see which suited fruit best, and came to the conclusion that on the whole this soil was to be preferred, although most fruits do well on the brick earth near Sittingbourne, Strawberries near Swanley, and Apples in the Weald. The sandy soil about Swanley is of course not nearly so rich as ours, but if it is regarded merely as a substance to hold the tree up, and plentiful applications of manure are given, fruit will do tolerably well, for there does not appear to be anything injurious in it. I had to wait a couple of years before I could obtain ground, but latterly, since prices have been lower than what they were, it is much more easy to obtain ground.

A stranger not knowing anything of the whereabouts of the ragstone range would be able to trace where it began and left off simply by reason of the fact that fruit plantations and Hop gardens, which are such a remarkable feature of it, cease almost entirely directly one leaves it. Notwithstanding the high quality of the Apples grown on this range, the trees canker, though how far they do so varies considerably. On the lower slopes of the range the rock is nearer the surface, and the ground is richer, and is lighter in colour, evidently from containing more lime. As the ground rises the soil is redder, apparently from lime being less abundant, and iron more so, until at the top the subsoil is a red clay, locally known as "red pin," thickly interspersed with ragstone *débris*, the stones of a darker colour than the rock lower down, and where they are embedded in the red clay are also of a red colour. The upper soil is much darker than on the lower slopes. The presence of such a number of stones causes very good drainage, so that even when there has been much wet, after a day has elapsed the ground usually "plumps up," as it is termed locally. No doubt the stones also prevent such a hard pan forming as described by Mr. Abbey. The present variations in the ground have perhaps been partly caused by the action of rain washing fine particles of the soil lower down, so that the lower ground is richer, as is always the case, and this has also been aided by the different crops cultivated.

The higher the ground the more the Apple trees canker. I would ask those who contend that canker is not a question of soil how they account for this fact? On the higher ground hardly any Pears will do well, the fruit of most varieties cracking so much as to be worthless, and the trees are unhealthy. Cherries do well almost everywhere, but on the higher ground are more liable to gum. The soil of which the analysis was given, and that of my own ground, is situated midway between the top and the bottom of the slope. It might be supposed from the fact of Apple trees cankering it was a poor soil; but it is not so. It is a rich brown loam in a very good condition; owing to the abundance of ragstone *débris*, is neither too heavy nor too light, and is well supplied with the principal elements of plant food. Experience shows that these are in a sufficiently available form, for all kinds of vegetables can be grown of splendid condition and quality, and, as I said before, fruits of high quality are cultivated. When the ground was last sold it made £100 to £150 per acre, hardly any being then planted with fruit. But although Apples of first-rate quality are grown, yet some of the trees of almost every variety canker. With some varieties there is only a tree here and there, and other sorts canker so much that it is impossible to grow them except for a few years. The soil which was analysed by Dr. Voelcker had not then had much manure for some time. Mr. Abbey and others of your readers who are interested will now more fully understand the nature of our soil. I have gone into the matter fully in hope of throwing



more light on this vexed subject, though I do not think much practical information will be gained without experiments in the way of plant food on the lines previously suggested by Mr. Tonks.

There is one point, however, which might be of practical importance. Mr. Abbey has given the analysis of a soil near Sittingbourne. What is now wanted is the analysis of a good Apple soil in the Weald of Kent. We can grow Black Currants and most fruits better than they can be grown there, but they beat us for Apples as far as clearness of fruit and healthiness of trees. As the soil there is heavy no doubt it contains a great deal of potash, which probably has something to do with it; but a comparison of the analysis of the two soils—as ours in the main is a good soil for fruit—would show in what the difference consists. I would undertake to get a sample of the soil for analysis, and would jointly bear the expense of analysis with others if it was considered worth while analysing it.—WALTER KRUSE.

WITH all respect to Mr. Abbey and other correspondents, I am strongly induced to believe that in determining a fungus to be the cause of canker in trees, they are putting the cart before the horse. My view is that of Mr. Tonks and other earnest inquirers—viz., that canker is a product of starvation in respect of the particular varieties affected, or in other words, it is a disease caused by the absence in the soil of the elements, which are essential to the healthy maturation of the wood. How is it that of two varieties of Apples or of Pears (and these two fruits suffer more from canker than any other) growing close together, under absolutely the same conditions, yet one is healthy beyond all question; the other cankers badly, and hardly ever ripens annual growths? The reason is obvious. One sort finds all that it needs in the soil, the other does not. Were the canker disease an epidemic that was contagious why should not all trees suffer alike?

I am not referring to young trees but to old ones, trees growing together, side by side, for forty years. Ribston Pippin, Alfriston, Wellington, cankering badly; Waltham Abbey Seedling, Cockle's Pippin, and Beauty of Hants doing splendidly. I mention these few sorts only. All on Crab stock; soil a deep, and not very sweet clay. Again, of Pears Alexandre Lambré, Thompson's, Nouveau Poiteau, and Williams' Bon Chrétien do wonderfully well, planted twenty-two years on the Pear stock. Beurré Diel and Beurré d'Amanlis canker very badly, fruit split and spotted, comparatively worthless; others, fruit perfect, clean, and delicious. Why is the canker, if it be a contagious fungoid disease, restricted to the latter varieties, and the former are perfectly healthy? We want something more than ideas to clear up matters of this kind. Why do contagious diseases attack some people and leave others alone? Because of predisposing causes. So it is the case with trees. The predisposing causes to canker are deficiency of tree food, the lack of essentials to health; in other words, of the formation of perfectly sound ripened wood. There is hardly any worse form of canker than is seen in the annual dying off of the young growths due to imperfect maturation. No wonder that stem canker is also in evidence all over the tree. Supply the roots with the essential food requirements, and the wood will perfectly mature; then, too, the canker in the stems will disappear.

When trees are old and the roots have gone deep into the soil, feeding them seems to be out of the question. Only the severe root-pruning and the renovation of the surface soil by removing the old and replacing it with new, also adding suitable manures, can furnish a remedy, except where it is determined to take the head of the tree clean off and replace it by grafting with scions from a variety that thrives well on the soil. Here we see the very same soil, roots, and stem that before could furnish for the old head only disease, now producing a perfectly healthy and productive head. What in such case becomes of the contagious theory? If anything could tend to court disease it certainly would be in the doing of all I have indicated. What we want to know in relation to this matter, and to enable us to discuss it intelligibly, is what are the physical needs or constituents of any variety of fruit that cankers badly, as compared with similar needs of sorts that on the same soil are healthy. That seems to be the only way to get at this canker trouble satisfactorily. In how many cases has it happened that younger trees showing signs of canker have been lifted, replanted in same place, and yet have been healthy afterwards for years? Simply because the roots were previously in soil that was devoid of wood and fruit constituents, and the lifting and replanting, so that the roots were in surface and fertile soil, furnished the needful constituents, and the tree was satisfied. Later, when the roots were again down in barren soil, the canker reappeared.

In the stiff clay of West Middlesex for many years certain Apples did splendidly, carrying healthy heads and fine crops. Then came a very cold wet summer, when the sap was crude and the wood unripe. A very hard winter followed, and during a period of intense hoar frost, wood of King of the Pippins, Lord Suffield, Wellington, and several other varieties was cracked or contracted by the frost in all directions, even branches so large as a man's arm being terribly injured. The trees have never recovered from that blow, and apparently never will. Still there were many sorts, Cox's Orange Pippin, Mank's Codlin, Blenheim Pippin, Yellow Ingestrie, and others that suffered nothing. The fact showed that some sorts had found even in a wet summer and on cold clay all their needs, whilst others had found them deficient. Wellington Apple has never been worth its salt in the district since; and in myriads of cases heads have been taken off and other good varieties put on, especially Warner's King, which seem to have been quite uninjured.

Mr. Abbey has treated readers of the *Journal of Horticulture* to a

scientific essay, but it will all the same satisfy very few. I prefer to follow Mr. Tonks to Mr. Abbey. When it is asked, Why does the nurseryman keep his trees free from canker? the reply obviously is, Because he always has young trees, which have had no opportunity to send their roots deep into unfertile soil. As to destroying the fungus by external applications, does anyone else suppose that in such way canker will be eliminated? Very few indeed. The fungus is but an ordinary parasite that fastens upon tree crowns and decayed wood or bark. We must find means to prevent canker, and then we shall see nothing of that parasitical ogre the fungus.—A. D.

I HAVE read with much interest the articles which have from time to time appeared in the *Journal of Horticulture* on the subject of canker in fruit trees. I am only an amateur without scientific knowledge, but having had experience of canker in about 100 Apple and Pear trees planted by myself about fifteen years ago, I gave the subject some consideration to try and ascertain the cause and provide a remedy. At first I thought it was caused by an insect, and then by fungus, but I came to the conclusion that the insects and fungus were due to the disease, and not the disease to them.

Canker may differ on various soils and in different localities. I am only speaking of it as it appeared among my own trees. I find it usually begins at the base of a twig or on some part where the bark has been bruised; that it begins in a very small way at first, and the sore or canker keeps getting larger until the bough is half eaten through and the twig wholly or partially dies. Seasons make a difference, a moist spring and early summer inducing a rather vigorous growth, succeeded by a dry time appears to encourage canker.

After trying several experiments, such as insecticides and cleansing the wound, I came to the conclusion, rightly or wrongly, that it arose from an imperfect flow of sap, the obstacle arising from a new twig or a bruise; also that my soil contains some ingredient which leaves at the obstacle in its upward or downward flow a minute sediment, getting larger during the summer and deviating by degrees the course of the sap until the sore or canker is formed.

As a remedy I cut off all the worst cankered branches, cleaned the remainder, pared off the top soil round the stems of the trees to about as far as I thought the roots would reach to the depth of nearly a foot, and put some strong decayed farmyard manure on the top of the roots, covering it with the top soil to induce the trees to find their sustenance near the surface instead of striking downwards to the poverty stricken and cankerous under-soil. The result was a complete success, and for several years canker almost disappeared from my Apple and Pear trees. It comes again after a time, but if I cannot quite cure it as the trees get older I can at least check it, and with older trees I accompany the operations with judicious root-pruning.

I get canker in Gooseberry and Currant bushes and Laurels (Caucasian), but these I leave to their fate, as it is easier and cheaper to replace them than try to cure them. I am of opinion that canker arises from the soil, and the only way to cure canker is to "cure" the soil, and that it is not dependent on outside influences.—THOMAS PENDERED.

#### NIGHT-BLOOMING CEREUS.

My plant of *C. Macdonaldiae* on the 17th inst. opened its seventy-second and last bloom. There had been many others which never developed. It commenced to flower on May 9th with five blooms, on the 12th it had eight, on June 3rd six, and on the 4th five flowers, and there were few nights without two or three. I have measured an individual bloom 16 inches across.—EDMUND TONKS.

HAVING noticed the remarks regarding the Night-blooming Cereus in the *Journal* (page 478), I enclose a photograph, which was taken by the magnesian light between 9 and 10 P.M. Your correspondent asks if it is unusual to have so many flowers open at one time. It may be so, for one does not often meet with it in private gardens; but my employer told me that where he brought our plant from he saw thirty-three flowers open at one time, that being at Ryde.

I have had my plant about six years, and it flowered last year for the first time. This season we had two blooms, and as a novelty the gardens were open for anyone who liked to come and see them. The flowers did not both open on same night. I think it a pity this plant is not more grown; it requires but little room, and I am sure the flower well repays for the fragrance and its size. I tried to get a cross, but was not successful, but shall try again another season should it flower.—J. GILBERT, *Rectory, Merrow, Guildford*.

[We are obliged by the small photograph, which illustrates one blossom fully expanded.]

THE under-mentioned particulars may be helpful in convincing Mr. R. Hilton, Faversham (page 478), that nine open blooms on a plant at one time are not in any way "unprecedented," as he has been informed. To him, no doubt, the sight may be unusual, but to us around this locality such an event passes by almost unnoticed, for in the garden of J. Duncan, Esq., Fernlea, Woolton, a fine specimen of this remarkable plant is to be seen. Mr. Griffiths, the gardener, has kindly placed at my disposal his diary, from which I have made the following extracts, omitting dates where the number of open flowers for one evening do not exceed six in number. For June, 1888: 23rd



and 24th, thirteen flowers; or a total of thirty-nine for the season. June, 1889: 18th, seven; 19th, seventeen; 26th, ten; July 13th, thirteen; total, fifty-eight flowers. July 7th, 1890, twenty blooms and a total of sixty-four; July 6th, 1891, six flowers; 8th, thirty-eight; total, 74 flowers. June 25th, 1892, eight; total, 22 flowers. June 7th, 1893, eleven, leaving twenty-four buds to open. During the autumn of 1891 a large shoot was accidentally broken off, thus accounting for the difference between the seasons 1891-92. We have been successful in keeping the flowers in perfect condition over a week.—HARRY CORLETT, *Woolton*.



**EVENTS OF THE WEEK.**—Horticultural events of special interest are not particularly numerous during the ensuing week. To-day (Thursday) the annual dinner of the Gardeners' Royal Benevolent Institution will take place at the Hôtel Métropole, as announced in our last issue. A Show of Roses and fruit will be held at the Gardening and Forestry Exhibition, Earl's Court, on Wednesday, 28th inst; and on the same day the annual display of the Richmond Horticultural Society will be held in the Old Deer Park, Richmond. The first annual Show of the Sittingbourne and District Rose Society will be held in the Town Hall, Sittingbourne, on June 29th.

— **THE WEATHER IN LONDON.**—The heat in the metropolis during the past week has been oppressive, and with the exception of a very slight local thunder shower no rain has fallen. Tuesday proved dull, and not quite so warm, as likewise did Wednesday morning, and at the time of going to press it is cloudy. Rain is much needed in the south.

— **THE WEATHER IN STIRLINGSHIRE.**—The highest shade temperature last week was 79°, the lowest 71°, with an average for the week of 77°. On Sunday at 7 A.M. it was 75°, and gradually rose until about 1 P.M., when it reached 90·5°, and at seven o'clock, evening, it recorded 74°. On Monday last the maximum was 83°.—G. MCDUGALL, *Ravenna Cottage, Stirling*.

— **THE PHILADELPHIA HORTICULTURAL HALL.**—The hall of the Pennsylvania Horticultural Society at Philadelphia was destroyed by fire a short time since. Fortunately, however, the most valuable portion of the Society's library was not damaged either by fire or water, and the valuable oil paintings of the founders of the Society were saved. The Directors have decided to erect a more spacious edifice on the old site.

— **FOREIGN POTATOES.**—Immense quantities of Potatoes were, according to the Board of Trade returns, imported into this country during May, the aggregate being 479,902 cwt. From the Channel Islands we received 228,788 cwt., as compared with 14,780 cwt. in the same period of last year. France sent 45,394 cwt., and Germany 106 cwt. only, against 846 cwt. in the corresponding month of 1892, and of 45,978 cwt. in May, 1891. From this it will be seen that there is a decided decline in the importations of Potatoes from Germany.

— **GARDENING AND FORESTRY EXHIBITION.**—The forestry section of the Exhibition is now fairly complete, and nearly all the exhibits promised by official bodies and private individuals are now *en évidence*. Among them will be found a most interesting consignment from Balmoral, lent by the Queen, as well as a vast number of examples of what may be termed the curiosities of forestry, illustrating abnormal growths and eccentricities of tree life. Other exhibits set forth the varying effects of salt and fresh water on timber, and ravages of insects.

— **SPRING SOWN CABBAGES.**—There can be no doubt as to the advisability of raising a few Cabbages in spring to follow those from seed sown in the autumn, as these latter are rarely good in quality after this date. We are now, June 15th, cutting useful heads of Sutton's Earliest from seeds sown in February, this allowing the autumn planted beds to be cleared and the ground cropped with ridge Cucumbers, Spinach, and other things. This variety is exceptionally quick in turning in, and when cooked is very tender and good in quality.—H. RICHARDS, *Rock Court, Salisbury*.

— **IMPORTATION OF APPLES.**—According to the Board of Trade returns for May the importation of Apples during that month amounted to 98,442 bushels, as compared with 91,608 bushels in May, 1892.

— **MR. D. MORRIS.**—We are pleased to see that Mr. Daniel Morris, the assistant-director of the Royal Gardens, Kew, has received the honour of appointment as Companion of the most distinguished Order of St. Michael and St. George.

— **OXFORD CARNATION AND PICOTEE UNION.**—We are informed that the annual Exhibition of this organisation will be held in Mr. Dodwell's garden on Tuesday, July 18th, the season necessitating holding the Show earlier than was originally intended.

— **BRITISH BUTTERFLIES.**—In the "Entomologists' Monthly Magazine" Mr. R. McLachlan, F.R.S., in an article on the extinction of several species of British butterflies within recent years and the apparent decadence of others, suggests the enforcement of a close time to last continuously during the whole of a series of five or ten years.

— **HORTICULTURISTS' CRICKET MATCH.**—Mr. R. Dean, Ealing, the Hon. Secretary, desires us to announce that on the occasion of the annual outing of the members of the National Chrysanthemum Society at Wycombe Abbey, on Monday July 17th, a match of cricket will be played with the members of the Aylesbury Horticultural Society, and he will be pleased to receive as soon as possible the names of members of the N.C.S. who are willing to play.

— **THE FERTILISERS AND FEEDING STUFFS BILL.**—In this Bill introduced by Mr. Herbert Gardner, it is proposed that every person who sells for use as a fertiliser of the soil any article manufactured in the United Kingdom, or manufactured abroad, shall give to the purchaser a warranty stating the ingredients used, and that where food for cattle is sold under a name or description implying that it is composed of any particular substance or substances, there shall be implied a warranty by the seller that it is composed of the substance or substances stated. The penalty for breach of the provisions of the Act is a fine not exceeding £20 for a first offence, and not exceeding £50 for a subsequent offence.

— **FORCING VEGETABLES.**—At the June meeting of the Dundee Horticultural Association Mr. M. Temple delivered an excellent lecture on "Forcing Vegetables." Mr. Temple referred to the means for cultivating forced vegetables, and remarked that early forcing in Scotland, so far as fruits and vegetables were concerned, was merely nominal compared with the practice in England in the majority of well appointed places. To successfully force Asparagus, strong, well ripened, and healthy roots and crowns were essential, each plant grown separately and freely exposed to the sun and air, so that the crown might be thoroughly matured. All kinds of vegetables suitable for forcing were dealt with, and a vote of thanks was accorded Mr. Temple.

— **SEAWEED AS MANURE.**—In an American contemporary it is stated that when this is used as a manure nothing is gained by allowing it to ferment. The best practice is to use it in its fresh state, either for ploughing in or for top-dressing grass lands, but as it contains 70 to 80 per cent. of water it will not pay to cart it a long way from the shore. Since it contains a comparatively large percentage of nitrogen and potash, it is not a well-balanced fertiliser, and needs to be supplemented by some material rich in phosphoric acid. It is preferred to stable manure for growing Potatoes, since they are less liable to the disease known as the scab than those grown on farmyard manure. Sea-wrack shares with commercial fertilisers the conspicuous advantage of being free from seeds and weeds, spores of fungi and eggs of insects.

— **MARGARET CARNATIONS.**—A number of these most useful Carnations are just opening hundreds of buds in the garden. If proof were needed to add to their popularity, I might mention that dozens of good named varieties growing in the same border have succumbed during the past winter, whilst the Margaret Carnations have stood untouched. Another proof was the experience of a neighbour of mine—Mr. T. Eaton, gardener to John Parrington, Esq., Roby Mount. In the autumn he found hundreds of buds on his plants outside, which seemed firm and likely to open. The plants were carefully lifted, put in 6-inch pots, and placed in the Peach house. Here they were flowered continuously throughout the winter and spring, and looked quite healthy. The value of plenty of Carnations with their sweet-scented flowers throughout the dull months may be readily imagined. The plants which are now coming into bloom are from seed sown in February, 1892, and they flowered all last summer.—R. P. R.



— THE ROYAL GARDENERS' ORPHAN FUND. — The Committee of this Fund held a meeting recently, when the Hon. Secretary announced the following special receipts:—From Mr. F. M. Mould, Birmingham, life subscription of 5 guineas, in place of an annual subscription; Mr. John Wills, Onslow Crescent, annual birthday gift, £10 10s.; Messrs. W. Thomson & Sons, Clovenfords, Galashiels, donation, £1 10s.; Mr. H. J. Jones, Ryecroft Nursery, Lewisham, donation, £1; young men at the Gardens, Ruxley Lodge, Surrey, per Mr. J. Miller, 10s.; and Mr. J. Perry, Crystal Palace Park, donation, £1.

— EXHIBITING RASPBERRIES.—A point which has often struck me when visiting exhibitions is the manner in which Raspberries are staged. Some are found with the stalks adhering to the fruit, others pulled out. I cannot help thinking that the former is much the best way to exhibit them. It is very seldom that we see a dish of Strawberries shown without the stalks, nor would they look so well, and why should the case be altered with regard to Raspberries? It is just to raise a little discussion that I have penned these few lines, and I am certain there will be many more besides myself who will be glad to hear the opinion of some of your readers on this subject.—R. P. R.

— WAKEFIELD PAXTON SOCIETY.—There was a large gathering of the members of this Society at the usual meeting last week. Mr. J. W. Macpherson, B.A., of Wakefield Grammar School, delivered a most interesting and instructive discourse on "Plant Adaptation for Fertilisation," illustrated with many fine lantern views, shown by Mr. Gregory. It is evident that Mr. Macpherson is an able and ardent botanist. In a chatty and humorous style he clearly explained how the seed vessels of various flowers are fertilised through the agency of insects in search of food, or by the wind, or currents of water in the case of aquatic plants. The mysteries of cross-fertilisation and self-fertilisation and the principles of development and degradation of various organs were lucidly set forth.

— CAN PLANTS SEE?—I do not suppose that "Scepticus," in inditing the note on page 478 recording what doubtless seemed to him to be a curious natural phenomenon, really imagines that plants are endowed with sight. What very probably happened in the case of this one particular Bean plant was that in staking the row it was irritated or its nerves influenced by a specially close contact with the stake, and that such irritation caused the points of the plant to circle round in search of the object which thus produced the irritation. It would be just as reasonable to assume that root spongioles in their search in the soil after food were capable of seeing as that the points of climbing plants should be so endowed. Nature has in each case provided facilities for searching but not for seeing. That is, at least, my theory.—A. D.

— THE ONION MAGGOT.—Looking over some 20 acres of admirably kept and cropped allotments (their first year as such) the other day, I could but remark upon the ravages created by the Onion maggot in every direction. There were considerably over 100 heads of Onions in diverse plots, and not one but was more or less affected. The best plot I saw was one sown thickly, and when I remonstrated with the grower for such apparent neglect in thinning, he said that he meant to let the plants stand just as they were, and if the bulbs were no larger than pickling onions he would be better off than most of his neighbours. The land had previously been under market cultivation, especially with Lettuces and similar crops, also heavily manured, and the allotment holders attribute this outbreak of the maggot largely to that. Of course such estimate is purely problematical. When asked for a remedy I had to admit that, so far as spring-sown Onions were concerned, it was difficult to specify one. When the best private gardeners were practically helpless in face of the maggot, what remedy could be recommended? It is obvious that once the fly has deposited its eggs, there is little chance of killing the pest. The best course seems to be to fork over the top few inches of the soil, on which Onions have been grown, several times during the winter, so as to expose the fly chrysalids to the birds; to top-dress early in February, not only old Onion beds but soil to be sown that year, with a dressing of gas lime, allowing it to lie six weeks, then forking it in; also not to sow more seed until from the middle to the end of April, so that when growth follows it may be quick; to frequently sprinkle the young plants with a solution of quassia chips and softsoap, and then dust with soot to render them obnoxious to the fly; and to have the soil as firm as possible. Probably one of the best remedies may be found in sowing Onion seed in the autumn, and then dibbling out plants into fresh soil at the end of March.—A. D.

— MESSRS. J. CHEAL & SONS' EMPLOYÉS.—The annual outing of the employés of the firm of Messrs. J. Cheal & Sons took place on Monday, the 19th inst.; Portsmouth and the Isle of Wight being visited. The Dockyard being first inspected, the company, numbering ninety-six, then adjourned to the Speedwell Hotel for luncheon, after which the party visited Osborne, Ryde, Sea View, and other places, returning to Crawley by the last train, all having spent a most enjoyable day.

— FLORAL FETE AT REGENT'S PARK.—A Floral Fête for children was held in the Royal Botanic Society's Gardens, Regent's Park, yesterday (Wednesday) afternoon. The idea of these fêtes, which are now held annually at the Gardens, is to encourage the use of floral decoration, such as may sometimes be seen at public ceremonies on the Continent. Awards were given for children's flower-dressed mail carts, sedan chairs, and ponies. A few special prizes were also offered for groups of plants, cut flowers, window boxes, and miscellaneous exhibits, to which a further reference will be made in our next issue.

— A RECORD FOR EARLY PEACHES.—We commenced gathering ripe Peaches in the open on June 18th, or fully a month earlier than last year, and I am disposed to believe this is the earliest date yet recorded. The variety is the Early Alexander, the trees being trained against a wall with a south-east aspect. At times this wall has been so hot soon after mid-day as to be almost capable of roasting the fruit, a south-east being the hottest of all aspects. The tree, when in flower, and for a few weeks after, was protected with doubled fish netting, and is carrying a full crop of fairly large, well-coloured fruit, those gathered being of better flavour than anticipated.—W. IGGULDEN, *Somerset*.

— SHEFFIELD CHRYSANTHEMUM SOCIETY.—The usual monthly meeting was held at Webster's Museum, Orchard Street, on June 14th, when some very fine British and Exotic Ferns were exhibited in competition by amateurs, and Pelargoniums by professionals. A very distinct and select collection of Gloxinia blooms, including some good spotted varieties, were staged by an amateur who was awarded a special prize. Mr. John Haigh presided over the meeting, and introduced Mr. Thos. Gartery of Rotherham, who gave an excellent practical essay on "Growing Roses in Pots." He dealt with his subject from almost every point of view. For pot culture he preferred Roses on their own roots. The advantages of growing Roses in pots were demonstrated, after which the chief points in culture were touched upon, including choice of varieties, habit of growth, contrast of colour, blooming qualities, form and outline of flowers, their keeping qualities and sweetness. He then gave a select list of Hybrid Perpetual, Tea, and Noisette varieties. Methods of propagation were clearly detailed, and the best compost for Roses given, followed by interesting remarks on potting, pruning, and training, and the prevention and destruction of insects and mildew.

— TRANSPIRATION OF TROPICAL PLANTS.—During a recent stay at Buitenzorg, in Java, Herr Haberlandt made some experiments in the Botanical Gardens on the transpiration of tropical plants. In general this was found considerably less than that of plants in Central Europe. Thus of seventeen tropical species, some with coarse, leather-like, others with tender leaves, nine species transpired per day and per square decimeter surface less than 1 gramme; in six the amount was between 1 and 2 gr.; and in two only it reached 2.6 and 3.25 gr. Now, with European vegetables and woody plants it varies commonly between 2 and 5 gr., and sometimes reaches 6 or 7 gr. or more. According to *Nature* this result the author considers a strong argument against the view that the transpiration current is of first importance in nutrition of land plants. These tropical plants, with their small transpiration, show extremely luxuriant vegetation, and are able through osmotic forces, doubtless, to convey nutritive salts to their highest parts. It is curious that, despite the great humidity of the air and the large amount of water in the ground, these plants often possess guards against too great transpiration, such as thick, cuticularised epidermis, deeply sunk stomata, and especially tissues adapted for storage of water. And the reason cannot lie, as sometimes at the coast, in the presence of salt in the ground. Herr Haberlandt finds an explanation in the fact that while the total transpiration is comparatively small, the hot sunny forenoons may occasion large evaporation. The transpiration in a forenoon hour was, in general, four to twelve times that in an afternoon hour; sometimes as much as twenty or thirty times. The forenoon hours are by far the most favourable to assimilation, and it is most important to the plant that its turgescence be not then too much depressed, an end accomplished through those water reservoirs.



— **WEATHER AT SWANMORE.**—With the exception of 0.02 inch of rain that fell on the 15th we have had thirty rainless days. The last previous rainfall was 0.15 May 20th. The total rainfall for the year up to date is now 6.87. Many shrubs that have been established for ten years are exhibiting a serious appearance for want of moisture. The heat during the last six days has been intense. A thermometer hanging on a north wall directly in a draught registered on the 19th 88°. Another with a northern aspect and hanging in the shade in the kitchen garden, reached 95°.—E. MOLYNEUX.

— **DOUBLE FLOWERS.**—A correspondent inquires how double flowers are produced. Many double flowers of gardens were first found wild. The florist, however, can produce double flowers. He watches this tendency in nature. If a flower usually has five petals, and he discovers that some of the stamens have somewhat of a petal-like character, the pollen is taken from these flowers and others in a normal condition fertilised with this pollen. This tendency once started is then given to the progeny. Almost any species of plant will, says *Meehans' Monthly*, in this way be capable of producing double flowers. It is surprising that with this knowledge, more attempts at this line of improvement in ordinary garden flowers are not made.

— **A NEW LUNG FOR LONDON.**—The Metropolitan Public Gardens Association added another open space to Hackney in the north-east of London on Thursday last. This new lung is situated in St. Thomas's Square, Mare Street, the site being given by the Governors of St. Thomas's Hospital. It has been tastefully laid out by the Association, while its future maintenance will be looked after by the Hackney Boards of Works. It was opened by Countess Brownlow, who on arriving was presented with a bouquet by Miss Holmes, the daughter of the Association's Secretary. The Earl of Meath presided over the gathering, and said that during the last ten years the Association had been enabled to throw open to the public no fewer than seventy-two grounds at an expenditure of something like £30,000. In addition to that they had prevailed upon the London School Board to open 178 of their playgrounds on Saturdays—practically the only day in the week which the children had to themselves. In the streets the Association had planted 2240 trees.

— **HORTICULTURE IN RUSSIAN SCHOOLS.**—There is now a general tendency in Russia to introduce some teaching in agriculture and horticulture into the primary schools. Both private persons and the provincial authorities freely give grants of land to the schools and to the teachers' seminaries for their fields and orchards, and in many schools the plots of arable land and gardens attended to by the pupils become small centres of agricultural and horticultural education. In *Caucasia*, says *Nature*, the same tendency is even more pronounced, and no better idea can be given of the extent of this new movement than by giving the following facts relative to the primary schools of Kuban, a province of Northern *Caucasia*. This year ten schoolmasters have been invited to attend the lectures upon sericulture and bee-keeping at the schools of the Cossack villages, Armavir and Labinskaya. The inspector of the schools has acquired, with the modest grant of £35, thirty appliances for raising silkworms, and five arrangements for each school for pumping out honey from the bee hives, and preparing the artificial wax honeycombs, in addition to which ten schools have been supplied with apparatus for silkworm culture, while others have been supplied with seeds of plants of special use to bees. All schools which have gardens of silkworm trees have been supplied with seeds of the tree, and 20,000 young trees have been distributed among them. Fourteen schools are expected this year to carry on the silkworm culture, and ten other schools are already carrying on experiments relative to the same.

## ABOUT HULL.—II.

### HESSEWOOD.

HESSEWOOD is so near the pleasant village of Hessle on the Humber side that ten minutes fair walking would probably suffice to take anyone to it from the station, unless, indeed, his powers as a pedestrian were extremely limited. The entrance lodge stands at the junction of four roads, one finger post pointing to Hessle, a second to Cave, a third to Swanland, and a fourth to a place of which the name was nearly obliterated, but apparently the river. I declined an unnecessary inquiry, and entered the gates of Hessewood. The estate is in the occupation of F. R. Pease, Esq., and the gardens are in charge of an old acquaintance, Mr. George Picker, formerly gardener to Mr. C. E. Shea at Foots Cray. He is a cultivator of much intelligence, and is doing good work in his new sphere.

The grounds have considerable attractions, and exhibit their fullest beauty in the ample leafage of summer. They are well furnished

with noble timber, amongst which some fine Evergreen Oaks are very conspicuous. Vistas of the river have been opened here and there amongst them, and the Humber at Hessle is not a mere line for the eye like the Thames at Twickenham, which is a streak of light so to say, with no pretence of filling the vision. The northern river must be nearly three miles across here, although its mouth is twenty-five miles away, and from angles which carry the eye up the stream towards its junction with the Ouse quite a broad sweep of water is viewed. This is a great advantage to the place, and the effect is not much less where the line of vision extends directly across the river to the swelling wolds of Lincolnshire beyond, for the shadows and glows upon them give pleasing effects. In the midst of vernal beauty it is an evil impulse which calls up thoughts of autumn, and conjures up ghostly visions of troops of fog fiends creeping up the valley, but they tell me that the terror of the Thames side has not serious dimensions in the East Riding. Happy Hessle!

What Mr. Picker does in the flower gardening way must be left to some future historian to say, for his plants were still under cover at the time of my call, and his plans locked within his breast. He has established a somewhat extensive rockery, and is adding other features of interest. The evidence of eyes and ears would suggest the reflection that Hessewood as it is to be will be a polished and improved edition of Hessewood as it is. In a hundred ways, little and big, the present chief is endeavouring to improve his charge and do credit to himself. His ideas are good, his taste evidently sound, his execution workmanlike. It is pleasant to see how, among the many bright and beautiful plants in the garden, Roses flourish as though thoroughly at home. Their growth is stout, vigorous and healthy. The more modest Pansies and Violas are also a sight to see. It is a glad recognition that heat and drought cannot quench their instincts for lavish blossoming, though like all things sentient, they would doubtless be grateful for genial showers. In its rich abundance of these delightful flowers, and in ample masses of autumn-sown annuals, what is known as Mrs. Pease's garden is a charming picture, bright, fragrant and informal.

From among a series of more than usually disjointed notes, some of which will have to go by the board, I will mention some very fine specimens of the old golden *Gymnogramma*. They are of considerable dimensions and in good health. There is also a grand plant of *Davallia Mooreana*. Hessewood does not indulge itself in giants in a general way, but these Ferns are beyond the average size. There are some fine specimens, too, in the way of *Hydrangeas*, huge plants in No. 1 pots, and 4 to 5 feet through, which are likely enough to find their way into the flower garden ere long. Another plant worth mentioning from its unusual dimensions is *Lapageria alba*, which is in admirable condition. A feature of the house containing the broad-backed *Gymnogrammas* referred to are some splendid baskets of *Adiantum cuneatum*. If not the most beautiful of basket Ferns the old Maidenhair is well worthy of being grown for the purpose. The Hessewood plants are of large size, well furnished, and in perfect health. Dwarf *Cannas* have nothing to boast of on the score of size, but they have in other respects. There are some seedlings 15 to 18 inches high that are now blooming well, and proving very valuable. The seed was sown in September last. Amongst several attractive varieties was a fine scarlet. It is worth while reflecting how useful these plants are for flowering under glass, and how readily they may be raised. *Carex marginata grandis* is held in high esteem, and the stock of it is large. The greenhouse, gay with Zonal *Pelargoniums*, *Heliotrope*, Musk, *Chorozemas*, *Petunias*, various Grasses, *Saxifraga pyramidalis*, *Liliums*, *Fuchsias*, *Gladiolus* The Bride, *Begonias*, *Nicotiana affinis*, *Streptocarpus*, and a fine variety of *Mignonette* called Sutton's Giant, hardly, perhaps, calls for any special comment, save to observe that it is full of healthy and profusely flowered plants admirably disposed.

Circumspection is required in writing about one important item in the fruit department—the Vines. A doubt may be frankly expressed whether they would satisfy many critics. Assuredly they do not satisfy Mr. Picker himself, and it is safe to say that if he had had the training of them they would not display their present appearance. In addition to remedying the effects of what may be mildly described as a certain eccentricity in the matter of training, he is waging a determined battle with that sad pest mealy bug. He is such a determined man, and so deeply interested in his work, that he will eventually succeed in both. He has done a great deal in eleven months, and ere another year has passed he will have done much more. The bush fruit out of doors is being skilfully managed. Time is found to top and thin Currants and to insure finer fruit by dressings of potash and bone manure. Currants are also extensively grown on walls. Mr. Picker is evidently devoting great care to the whole of the fruit, and in due course the collection will be one to be proud of, as indeed will be the whole of the beautiful place under his care.

### SWANLAND MANOR.

"Swanland Manor, a mile and a half from Ferriby Station, about two miles from Tranby Croft," was my instruction in this connection. I disdained the station, and went, as I had come from Hull, by road. It is a delightful walk from Hessewood, leaving Tranby Croft on the right, and he would be as difficult to please as Mark Tapley himself who did not enjoy the route, even though conscious of missing the beautiful avenue at Ferriby House (Mr. John Ostler's), which could have been seen from the road in walking up from the station. As we cannot get through the world without sacrifices this had to be borne philosophically. The proprietor of Swanland Manor is James Reckitt, Esq., one of Hull's prominent men, a supporter of what superior persons call cheap culture for the



people, and, if report speaks truly, one who knows both a good book and a good picture. Such a man can hardly fail to be capable of appreciating a good garden too, for the one is quite as much a work of art as the other, and consequently appeals to the same instincts. A little more "cheap culture" of the garden kind would do good to many, including the critics. Mr. and Mrs. Reckitt take great interest in their estate, and have reason to be proud of it. Although denied the picturesque effects of a mere undulating country the ground has been so well laid out that the general effect is excellent; moreover, the timber is good, and that is a great deal in itself. The place is particularly rich in Thorns and Beeches, and on the tennis ground is a grand specimen of *Cratægus oxyacantha*, 30 feet high and about the same through. It is a really noble tree, probably one of the best of its kind in the country.

Mr. George Wilson, who has charge of the Swanland Gardens, has made a reputation as an all-round cultivator, and particularly as an exhibitor of *Chrysanthemum* groups. Victories at Hull have followed each other with a regularity which must have become very tedious to the other competitors, and a ubiquitous judge has pronounced Mr. Wilson's groups to be amongst the best, if not quite the best, he had seen. This being the case, it seemed appropriate enough that the head gardener should be found in his shed hard at work, in shirt sleeves and apron, potting *Chrysanthemums*. I fancied I detected a gleam in his eye that displayed enthusiasm or first prize next autumn; but this may have been fancy, decidedly there is no imagination about the plants. About 400 are grown, and they are making splendid progress. But plenty of other things are well managed; particularly should *Crotons* be mentioned. Table decoration is a considerable part of the gardener's work at Swanland, and these plants are therefore in great request. The collection is a large and very varied one, comprising *Weismanni*, *Queen Victoria*, *Warreni*, *Mrs. Dorman*, *variegatus*, *Johannis*, *Emperor Alexander III.*, *Princess of Wales*, *undulatus*, *Morti*, *nobilis*, and others. Where all are so clean, healthy, and richly marked it is difficult to make special mention; but *Queen Victoria*, *Mrs. Dorman*, and *variegatus* are magnificently coloured. *Caladiums*, *Dracænas*, and *Dieffenbachias*, all largely used for house work, are also extensively cultivated; indeed, it may be said that foliage plants are a special feature of the houses at Swanland. Mr. Wilson is an adept in their management—that can be seen at a glance, and they do him very great credit.

Palms are, as would be expected, in considerable request, and *Kentia Belmoreana*, *Phoenix tenuis*, and *Areca lutescens* are prominent amongst them. A less familiar plant, but one of great beauty as grown at Swanland, is the old *Amaranthus tricolor*. The beautiful rosy red colouring, broken with yellow and green, produces a distinct and glowing effect. *Eulalia japonica variegata* is not met with in every garden, and in few so good as under Mr. Wilson's care. Later in the season the plumes rise to a height of 5 feet, and play a by no means unimportant part in the prize groups. *Cyperus distans*, with its long slender green leafage, is in good force, and so are the two handsome "foliage" *Abutilons*, *teselatum variegatum* and *marmoratum*. To say that these are grown is to say that they are grown well. Somewhat of an oddity, but a very brilliant one, is a huge plant of *Cereus Jenkinsoni*. By oddity, I mean something out of the usual run of greenhouse plants. It has had 200 of its glowing blooms open at once, and those who are familiar with its colour can give themselves an idea of the effect it produces. The hue, or rather hues—for there seem to be all manner of strange shades and glows about the flower—are indescribable. The plant is in a 10-inch pot, and has not been repotted for many years. Of *Richardias* there are some stalwart specimens, capable of yielding abundance of spathes, which are greatly in request. Ivy-leaved *Pelargoniums* and *Gladiolus The Bride* are two other "leading lines," to quote the language of the commercial. Large numbers of *Gloxinias* are grown, and presumably these beautiful plants are special favourites. There is a splendid batch of Sutton's strain now in bloom, and 150 more coming in to succeed them. *Eucharises* are another prominent feature. *Roses* and *Ferns* naturally have particular attention, and the collection of *Orchids* is growing. Of the latter a fine piece of *Dendrobium suavisimum* full of bloom, and a grand plant of *D. nobile*, which had 700 flowers on it last year, are worth mentioning.

But little reference can be made to the fruit. Let it suffice to say that the Vines, rejuvenated by Mr. Wilson, are bearing excellent crops, and that the Peaches and Nectarines are equally good. *Alexander*, which at Hesselwood, two or three miles away, gives great trouble through refusing to stone, is in every way satisfactory at Swanland, and greatly valued; so is that grand late Peach, *Gladstone*. More might very well be said about these if thoughts of space did not prevail; but they form no exception to the general rule of excellence.—W. P. W.

#### IN MEMORIAM: SAMUEL BARLOW.

It is truly a very marked sorrow in my life to write this brief memorial of a dear old friend. I can only say what many others would, as I lay it for "a spray of Lavender" in the pages of the old *Journal*, or as a white wreath of loving words, to the memory of one whom all who knew him so well will never forget.

By no men was dear SAMUEL BARLOW more beloved than by his fellow florists. Just as flowers were the earliest choice of his childhood, and floriculture the favourite recreation in his busy after life, so the friends who gathered round him in share or sympathy in this were among his dearest, and seemed to see him in the very sunshine of his life. There is an attachment in this relationship through flowers for which there probably can be no quite kindred tie in the

cares, competitions, and responsibilities of business life. Still, however, in those there are very many who deeply grieve at the loss of one so true and just in all his dealings, and who gave so freely of his time and thought, not to his own interests and leisure, but to the public good. I know there were circles of other specialist friends around him, in the world of Science and Art; and not seldom have segments, so to say, of these circles met at Stakehill—the artist and the florist, for example—each to see types and triumphs in his own pursuit, each wondering at what was plain and well known to the other, each receiving some expansion of knowledge, and perhaps wishing there could be some transfusion of powers.

To those of us who as middle-aged or older men have known Stakehill, with an intimacy like my own of five-and-twenty years, it is not probable that we shall ever know the like again. There is not the lifetime left for it! The *Primroses* of life's spring, and the *Buttercups* of its June, cannot bloom in its mellow August and chill October. It is thirty-five years since I first met Samuel Barlow, and it was over a mutual grief in *Tulips* that acquaintance ripened till we were as brothers born. He had grown for twelve years the only constant feathered *Kate Connor* (Rose) there ever was, and for another ten years it was under my care. Then, in a travelling accident, and along with many other of my *Tulips*, "Kate" was killed. Thinking Mr. Barlow would have more of her I wrote, and found that neither he nor I had ever had an offset from this supreme feathered strain of *Kate*.

Just before the Stakehill firm became "S. Barlow & Co." it had been an anxious question with Mr. Barlow whether or no he should start business in America. But in all the anxious thoughts he had remembered his *Tulips*, and provided for their welfare under the care of his brother-in-law, Mr. Wm. Bentley, then of Royton, until he had a good home for them across the Atlantic. Most happily in every respect, however, he resolved to stay at the old English home, otherwise how many of us would have lost the many happy years of fellowship we have enjoyed with him! and the help of his love, enthusiasm, impulse, tact and discernment that he gave to the culture and improvement of the old florist flowers.

It is only fair to say, as quite independent of all regard for him as a loved friend, that we have no one who can fill his place. There may be specialists in one or another of the old florists' flowers (sacred to me by the memories of a lifetime), but we have no one able to create, foster, and maintain the interest all round as he did. He was the best field officer we had. His aid in counsel and organisation was always sought and always trusted; it was never refused, and never failed. His sanguine hope and cheery spirit, his clear business capacity and foresight, his power of inspiring confidence, and courage in facing difficulties, were all qualities for which we esteemed and loved him in this one cause alone, to say nothing of what he was as a warm-hearted and faithful friend.

Mr. Barlow was familiar with all florists' flowers, both as to their properties and their culture, and if there was one more than another associated with him, it was the *Tulip*, which he grew for so many successive years at Stakehill—a collection so noted for its wealth of refinement, and into which he gathered the best new *Tulips* as they appeared among the raisers of the day. There is every hope that the Stakehill *Tulips* will be kept together, and that at Stakehill still.

As I stood on the summer morning of the closing scene there by the coffin, resting in the dear familiar old room at Stakehill, where with so many cheerful and now vanished faces I have spent numerous happy days and evenings, words rushed back to memory from Thackeray's ballad, "The Mahogany Tree," which we used to read and talk of together:—

\* \* \* \* \*

Life is but short;  
When we are gone  
Let them sing on  
Round the old tree.  
  
Evenings we knew,  
Happy as this,  
Faces we miss  
Pleasant to see,  
Kind hearts and true,  
Gentle and just,  
Peace to your dust!  
We sing round the tree.

Although in health my dear friend had been failing for some time, he fought on, perhaps all too bravely, against the tide and tale of years, and was still so engaged in the activities of a very busy and public life, that the end, coming after all from the effects of an accident, seems to have been sudden and untimely.

So, in a favourite picture in that same room—"The Angel of Death," by G. F. Watts—I could not but see a fresh sad emphasis now. It is full of restful light, and calm, and beauty. But among all the figures grouped round the Solemn Presence, from the little child playing with the Angel's robe to the blind old toothless lion resting at its feet, I thought that one was most symbolic of our dear friend at rest, which shows a strong man in armour, with bowed head, standing before the Angel, and not in fear, but firm obedience, laying his sword upon the altar of the Accepting Angel.—F. D. HORNER.

#### EMBOTHRUM COCCINEUM.

ALTHOUGH introduced many years ago, this beautiful evergreen shrub is seldom seen in gardens, it being apparently not generally known. It may sometimes be met with in gardens in Devonshire, Cornwall, and other south-western counties, also in Ireland; and when



well grown it forms a really beautiful sight. By some persons it has been designated "The Fire Bush," which is expressive as regards the brilliancy of the flowers. These are bright scarlet, and are produced in large sprays, such as that shown in the illustration (fig. 90), which has

aspect, sheltered from north and north-west winds. It is 20 feet high and 30 feet through, and is one mass of fire in colour. We have several other trees ranging from 10 to 20 feet height in bloom. The culture is somewhat difficult. Propagation is effected by seed, cuttings, and layers;



FIG. 90.—EMBOTHRIUM COCCINEUM.

been prepared from a spray sent by Mr. G. Maddeon, gardener to T. B. Bolitho, Esq., M.P., Trewidden, Penzance.

Regarding the specimen from which the spray was cut Mr. Maddeon writes:—"The tree has been planted out twenty years in a south

we have succeeded with them all." From this it will be seen that *Embothrium coccineum* requires a warm sheltered position when planted outdoors, though there is no reason why it should not be grown in lofty conservatories.



## THE DAHLIA.

[A paper read before the members of the Sheffield Floral and Horticultural Society by Mr. M. H. WILLFORD.]

(Concluded from page 485.)

As a support place a strong stake, say 5 feet 6 inches long by 1½ inch square in each hole before planting, so that the roots do not get damaged in driving the stake into the ground, as is very often the case. Some advise watering well at the time of planting; I think this a mistake, for when the soil is in a sodden state the roots do not take to it as quickly as they will to a warm and dryish soil. If the plants droop at all they should be shaded from bright sunshine and the foliage watered with a fine rose. When the plants are established I mulch them with about 3 inches of manure and level the surface, after this they require little else but copious supplies of water, and when water is given it must not be in dribbles, but when you think you have given sufficient just give it as much again, and you will soon see how it is appreciated. Some growers object to top-dressing in the form of a mulching of manure, contending that it causes the roots to come to the surface, so they feed the plants entirely with liquid and chemical manures.

Now comes the question, How much growth is it necessary to let the plant carry? Some advise taking off all the side growths but about three or four, then rubbing off the laterals as they come. I think the results are equally as good by letting the plant make a fair sized bush, taking care that there is no lack of air and light; then, when the plant has made its breaks from the main stem, take off all the laterals that come on the side shoots and you will have plenty of buds to select from, so that if some are deformed or not good enough you have others that are, and when it is decided which to keep you can disbud, and let those selected have the full benefit of the food stored up in the plant.

In growing blooms for exhibition purposes some protection is absolutely necessary. Almost every grower has a way of his own for doing this. Some grow them on boards covered with a flower pot with the bottom knocked out and a piece of glass laid on the top, or a similar contrivance, right from the bud to the mature bloom; others merely shade or shelter them from the sun and rain; others bag them and shade until a few days before they are wanted, then if they are not quite up in the centre they will board them and cover with a pot or bell-glass. A friend of mine uses a contrivance made of four pieces of board with a glass top in two pieces, forming a small span-roofed cover. He finds this to distribute the rays of the sun better than a flat piece of glass, bringing up the centre and keeping the bloom in better shape.

Insect pests should be our next consideration, as the Dahlia is much troubled with these. Snails must be carefully looked for, or they would soon destroy young plants. The earwig or twinge is also very fond of the Dahlia. There are many methods tried to keep the plants clear of these nightly visitants, one of which will spoil in a few hours a flower that has been cared for and watched with interest for a week or more. A few of the methods used are placing hollow sticks, such as elder with the pith picked out, old bean stalks, or what are commonly known as "keeks," amongst the foliage to be used by the earwigs as hiding places. Some use pieces of paper rolled up loosely into a ball for the same purpose, but I think we cannot mend the old-fashioned way of placing a small pot with a little dry grass in it on the top of the stakes, because they are so easily examined. The next pests are the green and black fly. Some folk say if you keep the plants growing they will not be troubled with the fly, but I find if I do not keep watering the foliage and occasionally syringing with soft soap water they will appear, even if the plants are growing freely.

Another insect plague is a kind of microbe which feeds on the young shoots and grows with the plant. There is only one way of getting rid of it that I know of, and that is to dig up the plants that are affected and burn them.

Now, having arrived at the flowering period, I think it will be advisable to look at the much-argued point of dressing the blooms. What constitutes dressing? Where does dressing end and "faking" begin? I think that to get good and perfect blooms, dressing, to a certain extent is necessary, but this can generally be done during the growth of the blooms; when it comes to taking out the centres, seed eyes, and green scale, and placing the petals, then I think it is not fair growing.

After the blooming period comes the question, What are we to do with the tubers? When the first frost has touched the foliage, cut the plants down to 6 inches from the ground, take up the tubers, and lay them upside down under a frame light until they are ripened,

then store them away in a damp and frost-proof place until it is time to start them again. Some growers store their tubers in sawdust, dry sand, and I have heard of them being stored in bran, but it does not matter much how they are stored, so long as they are kept from shrivelling on the one hand and decaying on the other; they will in most cases start into growth when the time comes.

A few of the best varieties are the following (taken from "E. M.'s" analysis of the National Dahlia Society's Shows, published in the *Journal of Horticulture* of March 30th this year), and which may well be repeated for the guidance of purchasers of plants.

*Pompons*.—E. F. Junker, Darkness, White Aster, Favourite, Grace, Isabel, Lady Blanche, Phoebe, Whisper, Gem, Admiration, and Red Indian.

*Cactus*.—Duke of Clarence, Juarezi, Robert Mayher, Marchioness of Bute, Panthea, St. Catherine, Delicata, and Kynarith. The three last named were only sent out in 1892. Of the still newer varieties Countess of Radnor and Bertha Mawley are of sterling merit.

*Decorative Varieties*.—Mrs. Hawkins, Amphion, Empress of India, Honoria, Mrs. Douglas, Black Prince, Charming Bride, and William Darvil. In addition to these you will find that Beauty of Brentwood, Henry Patrick, Asia, Miss Jeykel, Lady Kerrison, and W. T. Aberly are also very good.

*Singles*.—Amos Perry, Miss Henshaw, Victoria, W. C. Harvey, Chilwell Beauty, Duchess of Fife, Florence Fisher, Marion Hood, Miss Roberts, Northern Star, and White Queen.

*Show Dahlias*.—Mrs. Gladstone, William Rawlings, R. T. Rawlings, Harry Keith, Colonist, Mrs. Langtry, William Garrett, James Cocker, Henry Walton, Maud Fellowes, Ethel Britton, and J. T. West.

*Fancy Dahlias*.—Mrs. Saunders, Rev. J. B. M. Camm, Duchess of Albany, Mrs. J. Downie, Frank Pearce, Matthew Campbell, Henry Eckford, Gaiety, Peacock, T. W. Girdlestone, Chorister, and Mrs. N. Halls.

## NOTES ON STRAWBERRIES.

## STRAWBERRY NOBLE.

THIS Strawberry has done uncommonly well with me this year. The blossoms are very susceptible of frost, even before they have opened, but we had no such hindrances this season, and the great piles of enormous fruit, not one large one only, but several to each truss, have been quite a sight to see. They have been a great delight to the poor and sick, who have, with much welcome, shared our abundance. I expect this variety will have a boom this year for market and family use; and, considering its earliness, great size, and huge crop, I think it is, in a favourable season, the finest Strawberry yet raised for—giving away!

For personal use we have contented ourselves with the considerably smaller (but much better flavoured) Vicomtesse Hericart de Thury; that is, as soon as it came in, which was not for quite a week after Noble.—W. R. RAILLEM.

I COMMENCED to gather Strawberries on June 12th (Garibaldi and John Ruskin); the usual time for these varieties to ripen here is the beginning of July. President was gathered five days later. The season will be short, the crop scant, and the fruit small. Our heavy land has stood the drought well, but every day is telling more and more upon it, and unless rain will shortly come all crops will be small in sample and short in bulk.

John Ruskin is not equal to Garibaldi in flavour or texture of flesh. It greatly lacks the melting character of the latter Strawberry. However, it is quite distinct from any variety I have seen, therefore an agreeable change; it is also more uniform in shape than most sorts. I am testing a seedling of my own raising which greatly resembles John Ruskin in berry, but of superior flavour. The fruit is a shade smaller.—G. McDOUGALL, *Ravenna Cottage, Stirling*.

READERS of the *Journal of Horticulture* must have been pleased with the interesting note on Strawberries on page 476. The selection of varieties which Mr. Edward Luckhurst gives is an excellent one throughout, and as he invites criticism and any addition to his list I offer a few notes as to the behaviour of one or two varieties mentioned.

Amongst the earlier kinds Keens' Seedling on our heavy clayey land, however well worked, gives us only a poor return to such varieties as Noble, Sir Joseph Paxton, and Vicomtesse Hericart de Thury. In the case of Noble many will argue that Keens' Seedling is infinitely superior to that as regards flavour. This I admit, but where sugar and cream are used in conjunction with the fruit Noble is one which cannot well be done without, hence I have discarded Keens' Seedling. Another variety which I do not see mentioned amongst the early kinds is Pauline. This with us is a most remarkable cropper, more especially if grown annually, as the plants by some cause soon run out if left more than two years. It is not one of the prettiest fruits, either as regards shape or colour; the hard fluffy lump so often found in the inside of the fruit is a drawback. Dryness at the root often causes this, but if the plants are raised annually, well mulched and supplied with water, a decided



improvement is apparent in the flavour. For those possessing a market garden near a town, where the demand for Strawberries is great, this is a variety worthy to be in any collection. Its great cropping qualities, large size, and firm condition of the fruit are points which cannot be altogether overlooked, more especially if the fruit is to be sent into manufacturing centres.

Amongst the midseason varieties may I add the variety John Powell, which on our land has done wonderfully well for the past three seasons? John Powell is described as "a strong grower and an enormous successional bearer; fruit uneven, but of fine sugary pine flavour, and valuable as succeeding where Queens fail. As grown at Maidstone it is far better than President." This is, to my mind, an excellent description, but with us it is certainly not better than President as regards cropping. However, the growth is very similar to it, the fruit firmer, and one of the highest flavoured I have ever tasted. It is well worth a trial.

Two other varieties which behave with us much the same as Keens' Seedling are British Queen and Dr. Hogg. If your readers, who are successful in cultivating these three varieties, could kindly offer any suggestions as to ground it would be worth while our giving them another trial, for they are certainly the best flavoured of our Strawberries.—R. P. R.

### PECULIARITIES OF APHIS LIFE.

PROBABLY the fact pointed out by Mr. Hiam, page 479, that the Plum aphid (*A. Pruni*, I presume to be his species) will live and propagate itself during an ordinary winter, has been hitherto overlooked both by gardeners and entomologists. It has, however, for some time been known that the older observers were mistaken in supposing that the winter was a period of entire quiescence with the aphid race. Certainly in the great majority of species congress between the sexes occurs in autumn, and batches of eggs are deposited then, the only season when they are produced, these, as a rule, remaining unhatched till spring. Gardeners are familiar with the fact that in houses aphides may be found breeding during the winter months, and at the same season colonies of them are to be detected at the roots of fruit trees and herbaceous garden plants, having descended from the leaves in the autumn to feed where they can be sheltered. Aphides may also be seen upon some evergreens, and on a variety of low plants, such as grasses, in mild winters, but it still remains true that they are chiefly propagated by eggs from one year to the next. It is, I might note, one of the curious circumstances in ant history that these busy workers store up in their hills sometimes the eggs of various species of aphides, as Mr. Buckton and others state, bringing these forth at the spring season and placing them where the young progeny can obtain suitable food.

Mr. Hiam thinks that people generally attach too much importance to the aphid migrations and the influence of "east winds." I presume he does not question that such migrations occur, more particularly in spring and autumn—i.e., about May and September. As the late Mr. Walker pointed out, these migrations are brought on by a change in the atmosphere, a stillness or heaviness in the air occasionally happening when the wind is east, but not always. When such a "blight" occurs the flow of sap in vegetation is checked, aphid food runs short, and the insects appear winged, and travel to another locality. If these journeys are not always long ones they are in some instances. I have had ocular proofs of swarms of aphides travelling from Essex, crossing the Thames where it is nearly a mile wide, to settle on Kentish Hop grounds. Another interesting fact is that aphides not only migrate from place to place, but change their species of plant or tree. That abundant enemy of the Hop, *Aphis Mahaleb*, is known to feed upon Cherry and Plum in the spring. Again, the "dolphin," *A. Fabæ*, and other species, infesting culinary vegetables during summer, migrate from these to species of *Rumex*, Thistles, and other wild plants in the autumn.—ENTOMOLOGIST.

### BEGONIAS AT FOREST HILL.

THE extraordinary improvement that has been made of late years amongst Tuberous Begonias has brought them into the front rank of the florists' flowers. Either for bedding purposes or for growing in pots in greenhouses they are now considered indispensable. To the well known firm of Messrs. J. Laing & Son great credit is due for these developments. They have laboured incessantly with Begonias for several years, and their efforts have been crowned by unqualified success. A visit to their nurseries during the next few weeks will confirm this statement. The houses are literally ablaze with brilliant colours. Everyone should go; those who are interested to become more so, and those who are at present uninterested to be converted, as they must be when they see the magnificent plants carrying their admirably coloured symmetrical blooms.

The plants unquestionably form a spectacle well worth seeing. The single and double flowered varieties are arranged in separate structures, and a short selection from those in bloom on the occasion of my visit will doubtless prove of interest to those unfortunate readers of the *Journal* who are not in a position to go and judge of their beauty for themselves. The impression on entering the house devoted to the single varieties can be but one of intense admiration. The plants are of various sizes, but all bear the unmistakable sign of health in the grand foliage and the fine bold flowers. Duchess of Westminster is one of the most striking varieties in the collection, its crimson blooms having

a clearly defined white centre, are of good form, stand out erectly from the foliage. One cannot help seeing it, and to do so is to admire. One of the most floriferous is Lady Roberts, a pure white with large and substantial flowers. Amongst the dark crimsons, and they are numerous, it would be difficult to find one which has more good points than Mr. William Miller. The blooms are of a medium size, rich in colour, of matchless form, and the habit of the plant cannot be termed anything but perfect. Fringed White denotes a new departure amongst tuberous Begonias. The flowers are pure white and shapely, the petals being fringed at the edges. It is a very beautiful variety. An appropriately named variety is Guardsman, which is clear vermilion-scarlet in colour, the flowers standing boldly erect above the sturdy growths. Lady Mary Lloyd is a very charming salmon coloured variety. Sir J. Blundell Maple is a magnificent scarlet worthy of a place in choice collections.

It is in the double flowered section, however, that one finds the softest and most pleasing tints. The shapely contour of the flowers, more perfect than even the Rose, lacking only the perfume to render them fit and formidable rivals to the queen of flowers. What could one wish to see more beautiful than a plant of Glory of Stanstead? The flowers, which are borne with great freedom, are of a soft pleasing rose tint, slightly paler at the centre. They are of good size, and despite their great weight show very prominently on the plants. It is a variety for which one might confidently predict a great future. Lottie Collins is one of the most distinct in the whole of the collection. The colour is a pure salmon pink, the lower part of the petals which are charmingly fringed taking a slightly lighter shade. It is very floriferous, and the habit of the plant is excellent. Lady Theodore Guest is another very distinct and pleasing form. The colour is difficult to describe in a manner which will convey the best idea of its beauty; pale apricot, slightly flushed and suffused rosy crimson, faintly edged with carmine, is the only description I can give of it. The flowers are large, the petals broad and of very great substance, and the growth of the plant is very fine. Countess of Craven comes as an acquisition, as well as an addition to the pure white varieties. The erect, perfectly double flowers are of great size, and stand out from the leafage in a most striking manner. Earl of Craven is a taking colour, being a rich crimson, the blooms fine, and the variety is very free flowering. Mrs. G. Higgins is a beautiful variety, the colour of which is a soft pleasing yellow. The flowers are of good size, well formed, and the plant of fine habit.

At the time of my visit the beds in the nursery were being filled with tuberous Begonias, and despite the scorching weather they presented a robust and healthy appearance. It is computed that over 300,000 plants will be required to fill these beds, and when they are in flower in August they must present a sight which once seen can never be forgotten.—NOMAD.

### NOTES ON TOMATOES.

IT is natural that disease will at times attack all crops, and this season we, no doubt, may expect to hear of the harmful garden insects being nearly everywhere. In the instance given by your correspondent in the *Journal of Horticulture* of last week, page 471, it would assist him greatly if he fully looked back over his treatment of his Tomatoes from the purchase of the seed, and if in future he follows these rules for growing Tomatoes in pots, I anticipate that next season he will write to you more cheerfully. Young plants should be placed into 3 and 5 or 6-inch pots as soon as necessary, using rather poor soil at this stage of growth. In the final stage clear soot water now and then is invaluable to maintain healthy life in the plants.

The seed should be purchased from one of the best houses in the trade. Sow it very thinly in pans, previously scoured with lime and soft water. Use compost of a good proportion of leaf mould and silver sand, and plenty of drainage. Give only clear rain water. Put into pots in which they are to fruit just before coming into bloom. The pots should be thoroughly scoured with lime before using, and employ clean crocks for drainage. Only half fill the pots at first, reserving the space for an occasional top-dressing.

The soil in the first instance must not contain much manure. If procurable a large portion should be of good sweet old pasture loam with a small amount of leaf mould with a liberal amount of silver sand and charcoal; and add a little thoroughly well decayed stable manure. Turn this all over with a hand fork before using. When top-dressing, and the roots will indicate when this is required, use each time an increased amount of stable manure with the soil. Grow the plants on the single-stem system. Water freely, and give all the ventilation possible during the day without lowering the temperature too much. During such a summer as we are now having a little night ventilation is beneficial, but in ordinary weather I do not give any ventilation to Tomatoes at night. The ventilators are, however, opened very early in the morning.

I have grown Tomatoes in this manner for ten or more seasons, and as yet I have never had a diseased plant or fruit. I grow chiefly the Old Red. This season with other sorts I am giving a trial to Challenger, which is a variety spoken very highly of by the market gardeners round Evesham, and they generally find out the best of everything to grow.

I prefer old cases to pots for Tomato growing, but the drainage must be even more carefully attended to with plants growing in wood. Ten and 11-inch pots are large enough for growing for home consumption.



Twelve-inch pots would be a better size; this must depend upon the size of the house, and the number of plants required.—J. F. D.

My object in writing is to call attention to Mr. Coster's mode of growing Tomatoes at Froyle Park, Alton. He has an exceedingly heavy crop; all the blooms seem to be setting well; the bunches are large, and the fruit very fine in shape and size. I was so struck with the splendid appearance of the crop that I asked for a little information respecting Tomato culture, which should be instructive to growers. I noticed three varieties under cultivation—viz., Earliest of All, Reading Perfection, and Al, but all looked equally well.

The plants are grown in frames, and are tied to bean sticks, which are lodged upon forked sticks, about 6 inches from the glass. An interesting experiment is being tried on the best mode of placing the plants, the results of which, later on, I hope to be able to report. All the plants at the back of the frames are in 48-sized pots, these being sunk in about 6 inches of rich soil. The roots therefore grow over the tops of the pots into the surrounding soil, and ramify accordingly. Mr. Coster says this method prevents excessive growth and favours early fruiting, two of the most essential points for success in Tomato growing. I should certainly say that he is correct in his opinion, although the haulm was very strong and healthy, in some cases as thick as a man's thumb. An equal number of plants at the front of the frames are taken out of the pots and planted in the 6 inches of rich soil, and trained up the stick, so that we have two plants on each stick, one up and the other down, meeting in or about the centre of the frame.

It was really difficult at the present stage to form an opinion as to the relative value of the methods of planting, but the haulm in the latter case seemed much riper, and the lower leaves were very spotty, as if they had completed their work. If we can obtain an account of the weight of fruit in each case we shall have gained some useful information.

Mr. Coster believes in plenty of air and very little moisture among the leaves. The lights are open for the greater portion of the day, which keeps the haulm clear of insects. No water is allowed to touch the foliage, and very little has as yet been given to the plants. The syringe for Tomato growing is, he says, quite out of the question. Altogether this mode of cultivation has much to recommend it, for the shoots are readily tied, the fruit is well supported, it ripens well, and is easily gathered. The frames in this case had been used for early Strawberries, and this is the first trial of Tomatoes in them.

One remark may prove interesting about the setting of the blooms. Every day Mr. Coster (generally about midday) shakes each stick lightly, and he finds this is almost a certain mode of shedding the pollen and securing complete fertilisation. There is at present no sign of fungoid disease upon the plants.—EDWARD H. SMITH, Warminster.

## ROYAL HORTICULTURAL SOCIETY.

JUNE 20TH.

THE Drill Hall was well filled on this occasion, and there was a good attendance. Orchids were not so extensively shown as is sometimes the case, but hardy flowers were well represented. Roses formed the principal feature, this being the National Rose Society's first exhibition of the year, a report of which appears elsewhere in this issue. Some fruit was shown, as will be seen by the remarks below.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair), Dr. Hogg, Messrs. T. F. Rivers, G. W. Cummins, G. Taber, A. Dean, G. H. Sage, G. Wythes, J. Hudson, and H. Balderson.

Messrs. J. Veitch & Sons sent twelve varieties of Cherries gathered from pyramid trees in the open air. The fruit was well ripened, and amongst other varieties shown were Royal Duke, Knight's Black Early, Mammoth, May Duke, Black Hawk, Governor Wood, Nouvelle Royale (cultural commendation). Mr. W. Allen, Gunton Park Gardens, sent fruits of Lord Suffield, Gunton Park, and Empress of India Strawberries. They were all good flavoured (vote of thanks). Mr. Richard Parker, Impney Gardens, Droitwich, sent six Queen Pines, well grown fruits (silver Banksian medal). Mr. E. Beckett, Aldenham House Gardens, Elstree, also sent six grand Queen Pines, and a silver Banksian medal was recommended. Messrs. T. Rivers & Son, Sawbridge-worth, had well coloured fruits of Alexander, Waterloo, and Amsden June Peaches, all ripened in a cold orchard house (vote of thanks).

Several seedling Melons were shown, these coming principally from Mr. H. J. Easty, The Prospect, Sudbury; Mr. C. Brooke, The Gardens, Red Rice, Andover; Mr. A. Bishop, Westley Hall Gardens, Bury St. Edmunds; Mr. B. Ashton, Glossop Hall Gardens; but no awards were made, the fruit in some instances being of rather poor flavour. Mr. J. Douglas, Great Gearies, sent a seedling white Grape, the result of a cross between Black Hamburg and White Muscadine. The berries are medium size, and have a sweet Hamburg flavour. Messrs. H. Cannell & Sons, Swanley, sent a basket of George Rundle Strawberry, a brisk flavoured variety, but no award was made. Robert Mackellar, Esq., Abney Hall, Cheadle, sent a basket of fine President Strawberries, also a bunch of Oranges (vote of thanks). J. Watson, Esq., Berwick House, Shrewsbury, had fruits of Musa Cavendishi (cultural commendation).

Mr. Owen Thomas, The Royal Gardens, Frogmore, sent twelve punnets of Strawberries and the same number of Cherries, for which a silver Banksian medal was recommended. The Strawberries were very fine, especially Noble, James Veitch, Sir Joseph Paxton, The Countess,

Waterloo, and Aromatic. Dr. Kirby, Kelsey Park, Beckenham (gardener, Mr. Mark Webster), sent clusters of Sutton's Al Tomato; and P. Crowley, Esq., had specimens of dried Asparagus, also some in a cooked condition, showing that this vegetable can be preserved in this manner for future use.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair), Rev. H. H. D'Ombraim, Messrs. J. Fraser, W. H. Williams, H. Herbst, H. Bevan, G. Stevens, T. Godfrey, C. T. Bause, F. Ross, C. J. Salter, J. D. Pawle, P. Barr, W. Furze, W. Bennet-Poë, J. Walker, C. E. Shea, T. Baines, G. Gordon, G. Paul, T. W. Girdlestone, R. Owen, and J. Jennings.

Messrs. P. Barr & Son, King Street, Covent Garden, arranged an excellent collection of hardy flowers, prominent amongst which were Delphiniums in variety, Eryngium giganteum, Irises, Alströmérias, Lilliums, and Hemerocallis (silver Flora medal). Messrs. E. D. Shuttleworth, Peckham Rye, S.E., staged a collection of hardy flowers, amongst which some fine Delphiniums were very noticeable. The exhibit also included Pinks, Lilliums, Gladioli, Gaillardias, and some charming Roses (silver Flora medal). The same firm also staged a magnificent group of flowering and foliage plants, including Caladiums, Lilliums, Hydrangeas, Ferns, Palms, and Orchids (silver Flora medal). Messrs. J. Laing & Son, Forest Hill, staged a group of ornamental foliaged Tuberous Begonias, and a few double varieties. The former produced an excellent effect, rivalling the well-known Rex varieties in beauty of their leafage. The best of the double Begonias in this stand were Farini, Countess of Craven, and John Fraser. Awards of merit were adjudged for the two last-named, which are described elsewhere. Mr. J. Perry, gardener to J. C. Tasker, Esq., Middleton Hall, Brentwood, again showed a bright collection of Cannas and cut Roses. Messrs. F. Sander & Co., St. Albans, staged a fine plant of Aristolochia gigas var. Sturtevanti in flower, and also a plant of Maranta Leonia. Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, had some fine baskets of hardy shrubs, notably Notospartium Carmichaelia, Escallonia Philippii, and Andromeda speciosa cussinefolia.

Mr. Chas. Turner, Royal Nurseries, Slough, staged a grand group of Carnations, including Souvenir de la Malmaison in excellent form, and the fine Germania and Crimson Rambler Rose (silver Banksian medal). E. Herbert Fison, Esq., Stoke House, Ipswich, had a collection of flowering plants and Ferns which had been sent from New Zealand frozen in ice. The collection included Sprekelia formosissima, Asplenium lucidum, A. falcatum, Lomaria filiformis, Callistemons, Leptospermum scoparium, L. ericoides, Carpodetus serratum, Hedycarya dentata, Statice, and Clematis. Mr. E. C. Goble, Ryde, showed some Carnation blooms which had been cut from plants growing in the open border. Messrs. G. Paul & Son, The Old Nurseries, Cheshunt, sent two boxes of Her Majesty Rose in excellent condition, and also blooms of Paul's Early Blush and Charles Gater (silver Banksian medal). C. J. Grahame, Esq., Croydon, sent two boxes of Roses, fresh and beautiful, and for which a bronze medal was recommended. A. H. Gray, Esq., Newbridge, Bath, sent sprays of a seedling Climbing Rose named Allister Stella Gray. An award of merit was adjudged for this variety. Messrs. W. Paul & Son, Waltham Cross, sent a box of Roses Spenser and Clio, for which a silver medal was recommended.

Mr. Moore, Botanic Gardens, Glasnevin, sent flowers of Crinum Powelli alba, for which a first-class certificate was awarded. Other flowers also came from the same source, but no further awards were made. R. Smith, Esq., Hayes Common, Beckenham (gardener, Mr. C. Blick), secured awards of merit for Carnations Hayes' Scarlet and King Arthur. These are described elsewhere. G. F. Wilson, Esq., Weybridge, sent some charming forms of Calochorti, and two of these were deemed worthy of awards of merit. They are described below. Mr. C. G. Van Tubergen also sent some Calochorti, and awards of merit were adjudged for C. venustus oculatus, C. v. roseus, and C. v. Vesta which are described elsewhere. J. Brutton, Esq., Yeovil (gardener, Mr. A. Crossman), secured the first prize for twelve Delphinium spikes.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair), Dr. Masters, Messrs. J. O'Brien, W. H. White, J. Douglas, T. Statter, R. Brooman-White, C. J. Lucas, H. M. Pollett, De B. Crawshay, A. H. Smee, H. Williams, T. B. Haywood, and E. Handley.

Messrs. B. S. Williams & Son, Upper Holloway, N., sent a grand group of Orchids tastefully arranged, and for which a silver Flora medal was recommended. Conspicuous amongst others in this contribution were some fine plants of Epidendrum vitellinum majus, which made a fine display amongst the Cattleyas, Oncidiums, and Odontoglossums. The beautiful Dendrobium Deari, Cypripedium grande, and Cattleya Wagneri were also noticeable in this group. Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (grower, Mr. W. H. White), sent Cœlogyne sulphurea, a small flowered species; Lælia crispilabia variety, an exceedingly pretty little flower; Lousica vulceris and L. Amesiana (botanical certificates); and Phaius Humbloti, a charming species with spikes of pale pink flowers. T. Statter, Esq., Stand Hall, Manchester, exhibited a spike of Cypripedium Aylingi bearing two flowers. A statement shown with the blooms was to the effect that "the first flower on this spike was exhibited at the recent Manchester Orchid Show, and was awarded the Veitch Memorial medal and a prize for the best hybrid in commerce." It is a pretty flower, the lip being ivory white, the dorsal sepal and petals veined and spotted purplish crimson. Messrs. Charlesworth, Shuttleworth, & Co., Heaton, Bradford, sent a plant of Odontoglossum peruvienne (botanical certificate). Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, sent a spike of Selenipedium caudatum Wallisi, and Cypripedium hybridum, a pretty hybrid. Messrs.



James Backhouse & Sons, The Nurseries, York, sent a pan of seedling Disa, the result of a cross between *D. racemosa* and *D. grandiflora*. A spike of *Aërides virens* came from the Royal Botanic Gardens, Dublin, and *Cypripedium Psyche* from Mr. Charles Winn, Birmingham.

Messrs. Hugh Low & Co., Upper Clapton, sent a small group of *Cattleyas* and other Orchids, for which a silver Banksian medal was recommended. *Cattleya gigas Sanderiana* and some good forms of *C. Mossiæ* were noticeable in this group, as also was the pretty *C. Harrisoniæ*. Messrs. W. L. Lewis & Co., Southgate, N., had a group of *Cattleyas*, *Oncidiums*, *Cypripediums*, and *Odontoglossums* arranged with Ferns and other foliaged plants (bronze medal). Messrs. F. Sander and Co., St. Albans, sent a group of choice species and varieties. The best of these included *Odontoglossum vexillarium* var. *superbum*, *O. Uro-Skinneri*, the beautiful *Cattleya granulosa*, *Sobralia xantholeuca*, *Pescatorea Klabochorum*, the magnificent *Cattleya Warscewiczii* var. *Sanderæ* (award of merit) *Dendrochilum filiforme*, and *Epidendrum Fortgetianum*, for which botanical certificates were awarded. M. Wells, Esq., Broomfield, Sale (gardener, Mr. R. Hinds), sent a number of cut Orchid blooms, including the charming *Cattleya Mendeli delicata*.

#### CERTIFICATES AND AWARDS OF MERIT.

*Begonia Countess of Craven* (J. Laing & Sons).—A white double variety with a faint tinge of green in the centre of the flower (award of merit).

*Begonia John Fraser* (J. Laing & Sons).—A fine double variety with rich crimson scarlet flowers (award of merit).

*Calochortus venustus oculatus* (G. F. Wilson and C. G. Van Tubergen, jun.).—The flowers of this variety are large creamy white, each petal being evenly marked with yellow and brown at the base (award of merit).

*Calochortus venustus roseus* (G. F. Wilson and C. G. Van Tubergen, jun.).—This is a splendid variety with large flowers. The petals are rose tinted, have a reddish blotch in the centre, and are very prettily marked at the base (award of merit).

*Calochortus venustus Vesta* (C. G. Van Tubergen, jun.).—A pretty variety with creamy white petals, pale yellow at the base, and blotched dark brown (award of merit).

*Carnation Hayes' Scarlet* (R. Smith).—A splendid border variety. The flowers are large and of great substance (award of merit).

*Carnation King Arthur* (R. Smith).—This is a useful border variety with large dark red flowers (award of merit).

*Cattleya Warscewiczii* var. *Sanderæ* (F. Sander & Co.).—This is a magnificent form. The sepals and petals are bright rosy mauve, the latter being broad with fimbriated edges. The lip also is large, bright purplish crimson, and lighter edge, with orange yellow spots in the throat (award of merit).

*Crinum Powellii alba* (F. Moore, Botanic Gardens, Glasnevin).—A splendid form with large pure white flowers, strongly scented (first-class certificate).

*Gloxinia Princess May* (J. Laing & Sons).—A grand variety with pure white erect flowers of great substance (award of merit).

*Rose Allister Stella Gray* (A. H. Gray).—This is a climbing Rose. The flowers are rather small, buff coloured, and borne in clusters (award of merit).

*Rose Mrs. Harkness* (Harkness & Son).—This is a Hybrid Perpetual of some promise. The flowers are medium sized, good form, and resembling *Her Majesty* in colour, but rather lighter (award of merit).

*Rose Merrie England* (Harkness & Son).—A striped Rose of good shape, the flowers having a full centre (award of merit).

#### A VISIT TO TRENTHAM.

IN accordance with a kind invitation from the Duchess of Sutherland I recently paid a visit to Trentham, on my way home from London. In front of the house, which is quite palatial in aspect, are magnificent statues and fountains, rising from a perfect paradise of gardens, everywhere glowing with *Azaleas* and *Rhododendrons* and beautiful flowering trees, all of which at the period of my visit were in perfect bloom. An exquisite lake, in the centre of which is a wooded island, terminates the prospect from the window of the conservatory, which could not easily be surpassed. The nearest approximation to Trentham in Scotland, so far as my experience is concerned, is Floors Castle, near Kelso.

It has already been mentioned in the *Journal* that the Duchess of Sutherland is an assiduous cultivator of Eastern Lilies; I was not, therefore, surprised to find Mr. Blair, the head gardener, has of late devoted great attention, with most gratifying results, to the cultivation of these. There are such splendid varieties as *Lilium giganteum cordifolium*, *longiflorum Harrisii*, *speciosum, rubrum, album, roseum*, and *Krætzleri, umbellatum* and *Krameri, Wallacei* and *Martagon*. To me they were most interesting, for last October I had the pleasure of recommending those varieties.

But Orchids form the prevailing attraction at Trentham, where in houses specially adapted to these superb plants, they grow and bloom magnificently. I found the *Cattleyas*, *Lælias*, and *Dendrobiums* especially attractive. I was also much charmed with the Trentham Carnations, of which the finest were *Souvenir de la Malmaison* and *Mrs. Muir*, the latter a pure white variety of perfect form and matchless fragrance.

Roses do not grow well in Staffordshire, for which reason they are chiefly cultivated by the Duchess at her Lilieshall residence near

Newport in Shropshire, where a Rose garden has been recently established. There they have probably a purer atmosphere and a more congenial soil.—DAVID R. WILLIAMSON.

#### HABERLEA RHODOPENSIS.

ALTHOUGH by no means a new plant, having been introduced in 1880, *Haberlea rhodopensis* is seldom seen in gardens. It is dwarf, resembling a *Ramondia* in habit, but with somewhat funnel-shaped flowers, 1 inch long, like a small *Streptocarpus*, the tube purple, and five white lobes. They are borne in trusses of three or four flowers each, arising from amongst the foliage. *Haberlea rhodopensis* is a native of Macedonia, and is closely related to the two genera mentioned above. In Decandolle's "Prodromus" it is placed in the



FIG. 91.—HABERLEA RHODOPENSIS.

family *Cyrtandraceæ*, between *Ramondia* and *Conandron*, both monotypic genera, *R. pyrenaica* and *C. ramondioides* being well-known garden plants.

#### THE GREAT YORK GALA.

JUNE 14TH, 15TH, AND 16TH.

ONE of the disadvantages of a first visit to a show of old standing, writes our special correspondent at York, is the impossibility of replying to the question which everybody asks, and that is, how the Exhibition compares with its predecessors. If you frankly confess you do not know, because you have never been before, you receive a stare that is one of incredulity if not of pity, and of pity if not of incredulity. In the minds of York people and those living in other parts of the county all that is highest and best in the way of floral displays is that which has been held for thirty-five years in the old Cathedral city, and not to see it as it comes round season after season is to miss the great event of the year. It is not a function of the ordinary kind. There is not a committee of gardeners to get together in solemn conclave and make the essence of their deliberations the decision of some such knotty point as whether there should be two classes for *Coleuses*, or whether there should be one only, or whether there should be none at all. But a body of business



men, including many leading lights of the City Corporation, bring their energies to bear. They put matters on a broad and popular basis, and ally with the Exhibition a long and varied course of entertainments. They have had their reward. At Gala time quiet York hardly knows itself. Visitors pour in from far and near and crowd into the show grounds in thousands. No matter whether it is the fruit or the fireworks, the bouquets or the balloon, the Irises or the feats of strength which attract them, they come, and that is the main thing. There are plants and popularity, flowers and fun, and so the York Gala goes on its way prosperous and rejoicing.

A mistake that might be made in some cases would be to consider that the Show might be treated as a minor consideration, that anything in the way of horticultural products would suffice. It is not made at York. The Exhibition is the leading feature, and the other things are accessories. A most extensive schedule is compiled, and several hundred pounds given in prizes. One class for groups absorbs £58, and the first fruit class takes £25. This means prizes worth striving for by the leading cultivators, and consequently the exhibits are of the first quality. Common report and the testimony of experts characterised this year's Show as one of the best, if not the very best, yet held. Certainly there was much both to astonish and delight a new visitor. Take the case of the groups. They were totally distinct from the common order, more tasteful, more complete. That of Mr. McIntyre, which won the first prize of £20, was really a work of art, as carefully thought out, as boldly limned, and as exquisitely finished as a great painting. There is the soul of a true artist in the man, unknown to the present writer, who designed and executed this marvellous group, and as much respect ought to be felt for him as for a Tadema or a Millais. The specimen plants must be placed in a different sphere, for their chief qualification is bulk; nevertheless, as examples of culture they were remarkable. Mr. Cypher, Mr. Letts, Mr. Nicholas, Mr. Leadbetter, and others brought out some of the wonderful giants with which their names are associated, and very striking they were in their huge proportions and fine colours. The Pelargoniums, too, made a surprising display. They nearly filled one large tent, forming two immense banks ablaze with all the hues these robust plants possess. Very rarely are such examples met with as those which Mr. Vear, Mr. Eastwood, and Mr. McIntosh exhibited. The foliage and bloom were extremely fine, and they were allied to great size of plant and admirable training. It would be impossible to comment specially on all the things worth special mention, but it may be added that the cut flowers were a splendid feature, and that fruit was very finely shown, Mr. McIndoe's win in the leading class being gained by material of sterling quality.

It might be expected that the experience of thirty-five years would teach valuable lessons in the way of arrangement, and certainly there is little to take exception to. The disposal of the tents, the allotment of space for exhibits, the judging, and the countless details connected with such a gigantic undertaking were effected in a satisfactory manner. Alderman Sir Joseph Terry, Mr. Alderman Milward, and the Secretary, Mr. Simmons, worked with praiseworthy coolness, and so matters went smoothly on. They were all valuable helpers, and the Gala owes much to them. The Lord Mayor (Mr. Alderman Close), an amateur gardener of great earnestness, also takes a deep interest in the undertaking, and actively supports it. Judging by his speech at the luncheon age has neither quenched his love for gardening nor dimmed his wit. It was claimed for him that he might fairly be termed an ancient York florist, for he had cultivated Dahlias sixty years ago. The collation brought together a most pleasant gathering of northern horticulturists. Glorious weather favoured the Gala throughout, and all went merrily as a marriage bell. The total number of visitors last week were 52,915, an increase of 12,400 over that of last year, and 3169 more than in 1890, the highest number on record until this year.

#### GROUPS.

The groups were to consist of "miscellaneous plants arranged and banked for effect, and occupying a space not exceeding 300 square feet." This afforded good scope, and as prizes of £20, £15, £10, £8, and £5 were offered it was not surprising that one of the six large tents was fully occupied. It is difficult to imagine that the art of grouping has been carried to higher excellence than at York. Two of the arrangements can only be justly characterised as magnificent, while a third, though less original, was very beautiful. The valuable first prize went to a superb group arranged by Mr. McIntyre, gardener to Mrs. Pease, which was beautifully designed and admirably worked out. So complete and elaborate was it that a description cannot do it justice. The centre was occupied by a large mound of stones covered at the base with Ferns, Cattleyas, and other flowers pushing through. Above was a bright, but not heavy mixture of Crotons, together with various Orchids and other flowers, a graceful Palm surmounting the whole. In a line with this at each end was another smaller mound somewhat similarly planted. In front of these three mounds were two lower ones arranged so as to form with the larger a pair of triangles; a line of Ferns, Palms, Caladiums, and other plants formed a beautiful background, and in front was a broad border or low bank of Ferns, Caladiums, Crotons, Dracenas, Orchids, and other foliage and flowering plants. There was no crowding, each mound had a broad base or groundwork, and the plants were disposed with faultless taste. Clearly Mr. McIntyre is a master in plant arrangement. If there was an academy of garden artists he would soon be admitted.

Another very beautiful group was put together by Mr. Edmonds, gardener to the Duke of St. Albans. Broadly speaking, it consisted of a series of mounds and recesses, the arrangement being graceful, free,

informal, and extremely beautiful. It was full of bright flowers and cool foliage. In the ordinary course of events such a group would have scored an easy victory; but though defeated Mr. Edmonds secured a handsome prize as a reward for the care and taste which he had displayed. The third prize went to Mr. W. H. Simpson, whose group was full of good material tastefully arranged, but displaying less originality of design than the others, and if anything a little heavy. Mr. Semley was fourth, and Mr. Stephenson fifth. Mr. Letts, gardener to the Earl of Zetland, Aske Hall, secured the first prize of £20 for a group of ten stove and greenhouse plants in bloom (Orchids excluded), and six ornamental foliaged plants, with some magnificent specimens. *Croton angustifolius* was a noble plant 6 feet high and through; *Azaleas Cedonulli* and *Criterion* were splendidly flowered plants about 6 feet by 6. *Erica depressa* was about 7 feet across and full of bloom; and there was a fine plant of *Anthurium Schertzerianum*, together with a superb *Kentia Forsteriana* about 12 feet high. Mr. J. Cypher was a good second with some excellent specimens, such as *Pimelea diosmæfolia* 6 feet across, *Erica ventricosa hirsuta alba* of equal dimensions, *Latania borbonica* 20 feet high, and a grand *Bougainvillea glabra*. Mr. J. F. Mould was third.

#### SPECIMEN PLANTS.

Mr. Cypher was first with six stove and greenhouse plants in bloom, Orchids excluded, exhibiting a most powerful contingent. He had *Phenocoma prolifera Barnesi*, 5 to 6 feet across and full of bloom; *Erica Cavendishiana*, 7 to 8 feet; *E. ferruginea major*, *Hedera tulipifera*, 6 to 7 feet; *Ixora Williamsi*, and a good *Dracophyllum gracile*. Mr. Mould was second with a grand *Phenocoma*, larger than Mr. Cypher's, but hardly so full of bloom perhaps; *Erica tricolor Wilsoni*, 7 feet through; a fine *Statice profusa*, and other good plants. Mr. Nicholas, gardener to the Earl of Zetland, Upleatham, was third with *Erica Cavendishiana* and *Dracophyllum gracile* in excellent condition. Mr. Nicholas was first with three plants, these including a splendid *Ixora Pilgrimi*. Mr. Haw, gardener to Mrs. Lloyd, second with a fine *Bougainvillea* amongst his trio; and Mr. J. P. Leadbetter, gardener to A. Wilson, Esq., third. Mr. Slater, gardener to the Lord Mayor of York, was first with one plant, a very healthy and well flowered *Stephanotis floribunda* on a balloon shaped trellis representing him. Mr. Letts was second, and Mr. McIntyre third. In the corresponding class for a greenhouse plant Mr. Letts was successful with *Aphelaxis macrantha rosea* beautifully bloomed. Mr. Atkinson, gardener to F. Schröder, Esq., second; and Mr. Rollinson, gardener to W. Bateman, Esq., third.

For six ornamental foliage plants Mr. Letts was first, his contribution including a magnificent *Croton montefontaineensis*, 7 to 8 feet through, and splendidly coloured; a fine *Cycas revoluta*, and *Kentia Forsteriana* and *australis* of considerable dimensions. Mr. McIntyre was second, *Cycas revoluta*, *Crotons angustifolius* and *Queen Victoria* 7 to 8 feet across being his best plants. Mr. Sunley and Mr. Simpson secured the remaining awards. Mr. Leadbetter won with three plants, Messrs. Nicholas and McIntyre following; and in the class for two plants (amateurs) the awards went to Messrs. Rollinson, Leadbetter, and Letts, in the order of their names. Mr. Letts was the only exhibitor of three greenhouse *Azaleas*, and was placed first for huge, informal plants well flowered. Mr. Cypher was successful with one plant. Mr. Letts was to the front with four Crotons. He had a magnificently coloured *Queen Victoria* about 7 feet through, and a very fine *Chelsoni*. Mr. McIntyre was second. The latter was victorious with four *Dracenas*, showing large and well coloured plants. Mr. Leadbetter was second, and Mr. Smallwood, gardener to H. Leetham, Esq., third. The best three Cape Heaths came from Mr. Cypher, *Jubata rubra*, *Kingstoniensis*, and *Massoni major* representing him. Mr. Mould was second. Messrs. Atkinson; F. Young, gardener to T. F. Wood, Esq.; and W. Dodds, gardener to the Hon. C. Lambton, took the prizes for Coleuses. Messrs. E. D. Shuttleworth & Co.'s prizes for Palms and fine-foliaged plants were won by Mr. Sunley and Mr. Simpson.

#### FERNS.

Ferns are admirably grown in the north, and many fine plants were exhibited. Mr. Nicholas was first with six exotics, having *Davallia fijiensis plumosa* 7 to 8 feet across, *D. tenuifolia Veitchi* of nearly equal dimensions, *Leucostegia immersa* about 6 feet, *Lomaria zamiaefolia*, *Sadleria cyatheoides*, and *Gleichenia Mendeli*, 6 feet through. Mr. McIntyre was second with *Dicksonia antarctica*, *Davallia fijiensis plumosa*, and *Gleichenia Mendeli* of fine proportions and health; and Mr. Snowden, gardener to the Rev. G. Yeates, third. Mr. Leadbetter won with three, having splendid plants of *Leucostegia immersa*, *Microlepia hirta cristata*, and *Gleichenia dicarpa*. Messrs. McIntyre and Lazenby, gardener to H. Bushell, Esq., were second and third. The best single specimen came from Mr. Rollinson, who had a splendid *Gleichenia rupestris glaucescens* 6 feet across, Messrs. Smallwood and Leadbetter following. Mr. Nicholas had the finest Tree Fern, a very fine *Dicksonia antarctica*; and the next best plants came from Messrs. Simpson and Eastwood. Hardy Ferns were also well shown, and the collections were of great interest to lovers of this class. Mr. J. Nicholson won with ten plants, one of them being an *Athyrium filix-femina Howardianum*, 6 feet across; Messrs. J. Jackson and Simpson following. With six, Mr. Jackson won from Messrs. Nicholson and Snowden. The best single specimen came from Mr. Nicholas, this being a *Trichomanes radicans*, nearly filling a 4 feet case. Mr. W. Heppell was second, and Mr. Lazenby third.

#### ORCHIDS AND OTHER FLOWERING PLANTS.

For ten Orchids £22 was offered in four prizes. The premier award went to Mr. Cypher for even healthy and well flowered pieces of *Lælia*



purpurata, Cattleya Mossiae, C. Mendeli, Dendrobium suavisimum, Anguloa Ruckeri, Thunia Marshalli, Oncidium macranthum, and three others. Mr. W. Holmes, gardener to W. Hardy, Esq., was a close second with some excellent plants, a large Cymbidium Lowianum, a good Dendrobium Dearei, and Cattleya Warneri in fine condition, being amongst them. Mr. Rollinson was third, and Mr. Sunley fourth. Mr. Holmes won with six, even healthy plants full of bloom representing him. Messrs. Cypher and Sunley followed. Messrs. Holmes and Slater were first and second with four plants, and Messrs. Cypher and Holmes second and third with three. Mr. W. Church, gardener to P. Thelluson, Esq., was first for one plant, exhibiting a beautiful Cattleya gigas with fourteen grand flowers in perfect condition. Messrs. Nicholas and Eastwood were second and third. Gloxinias were a splendid display, the principal exhibitors being Messrs. Guest (gardener to C. B. Lamb, Esq.), R. Pearson (gardener to J. Bellerby, Esq.), Dawe (gardener to Dr. Pierce), and Atkinson. Alpine and herbaceous plants were very beautiful; twenty plants were asked for, and Mr. J. A. Rodwell was first with a grand collection. He had a pan of the pretty rosy lavender Dianthus fimbriatus nearly 2 feet across, Silene saxatile, Artemisia vulgaris variegata, and other good plants. Mr. S. Hardcastle was second, and Mr. G. Hudson third, both exhibiting Mrs. Sinkins Pink. Pelargoniums were superb. Messrs. Eastwood and McIntosh have generally had hard struggles for first place, but on this occasion they were both beaten in this class for twelve Shows by Mr. J. Vear, gardener to Miss Steward. He had splendid, healthy, well trained plants full of flower. Mrs. Morrison, Duchess of Teck, and Rose Celestial were about 4 feet across, and others 3 to 4 feet. Mr. Eastwood was second with Madame Thibaut and Madame Hilaire, 3 to 4 feet across, and Kingston Beauty, 4 feet, the others being smaller. Mr. R. McIntosh, gardener to J. T. Kingston, Esq., was third. Mr. Vear won again with six, the plants being smaller than the others but in perfect condition, and the second and third prizes were again won by Messrs. Eastwood and McIntosh. The order was exactly reversed in the class for three. Mr. H. Pybus has some splendid Zonals and Nougays, winning easily in the leading class. He had Sir H. Stanborough and Mrs. Kelley upwards of 5 feet across, with Mrs. Turner and Mulberry closely approaching them, all full of bloom. Messrs. Eastwood and Vear secured the remaining awards. Mr. Eastwood was first for six, the second and third prizes being withheld. Mrs. Tetley's skilful gardener also won with three, Mr. Vear being his most dangerous opponent, and again with eight doubles, these being grand plants. Messrs. Cottam, jun., and Simpson were second and third. With four plants the struggle for premier honours once more lay between Messrs. Eastwood and Vear, the former winning. Ivy-leaved were splendidly shown by Mr. Pybus, who had large pyramidal plants with ample foliage and abundance of bloom. La Florifere was a grand plant. Messrs. Cottam, Eastwood and McIntosh accounted for the remaining prizes, while in the class for three Messrs. Leadbetter and McIntosh were second and third. The best Tuberous Begonias came from Messrs. Bailey and Co., the best Calceolarias from Mr. Guest, the best Fuchsias from Messrs. Simpson and Clarke, and the best Liliiums from Mr. Eastwood. Mr. McIndoe won with table plants, Messrs. Rollinson, McIndoe and Snowden following.

#### ROSES AND OTHER CUT FLOWERS.

This is an early season, but June 14th was somewhat too early to look for a high class display of Roses. Surprising to relate, three exhibitors had managed to get stands of seventy-two together, but naturally they were only of moderate quality. Mr. May of Bedale was first, Messrs. Harkness & Son of the same place second, and Mr. G. Mount of Canterbury third. The first named had Marie Baumann, Mrs. J. Laing, Comtesse de Ludre, and Queen of Queens in good condition. Mr. Mount won with forty-eight, Ulrich Brunner, Souvenir d'Elise, Madame G. Luizet, and Mrs. J. Laing being his best flowers. Mr. May was second. With thirty-six Messrs. Mount and Jackson & Co. were first and second, while with twenty-four Mr. E. B. Lindell was victorious, he having Lady Mary Fitzwilliam, Madame G. Luizet, Souvenir d'Elise, and Viscountess Folkestone in excellent trim. He won again with eighteen, and with another eighteen in the amateurs' class, having good flowers in both. The Rev. F. R. Burnside was first with twelve white and yellow blooms, the Hon. Edith Gifford and Marie Van Houtte being very good indeed. Mr. Mount was second, and Mr. May third. Mr. Burnside also won with twelve Teas of one variety, having an admirable stand of Innocente Pirola, the other prizes going to Messrs. Mount and May. A third victory fell to the famous grower of Teas in the class for twelve blooms, this being one of the best stands in the Show, and a fourth in that for six. Plants in pots were best shown by Messrs. Pybus, W. Jackson & Co., Eastwood, Church, Vear, and J. Hume.

Cut flowers generally were extensively shown, but space cannot be found for details of the awards. Pyrethrums as exhibited by the leading prizewinners, Messrs. Hutchinson and Harkness, were very fine. Messrs. Ware's prizes for herbaceous flowers were won by Messrs. Harkness, Hutchinson, and Riddell; those of the Committee by Messrs. Harkness, McIndoe, Riddell, and Hutchinson. Show Pelargoniums from Mr. Holmes were good, Carnations and Picotees from Messrs. M. Campbell, H. Clark & Son, Fletcher and Archer, fair. The Lord Mayor gave the prizes for the latter, and does well to encourage the culture of such beautiful flowers, but it was too early for them. Mr. Letts was first with twelve stove and greenhouse flowers, Mr. McIndoe second, and Mr. Cottam third, while in another class from which Orchids were excluded the winners were Messrs. Nicholas, Cottam, and How. Mr. McIndoe won with six, and Mr. Colchester's prize for nine was secured

by Mr. Cottam. Mr. Cypher was first for a vase with a light and beautiful arrangement, Messrs. Lunt, Edmundson, and Webster following. The skill of Messrs. Perkins & Son was well shown in the bouquet classes, for they were first with bridal, ball, and hand bouquets, scoring another victory with a hand basket. Mr. Edmundson also showed very creditably. Pansies and Violas made a charming display. Mr. A. Bailey, jun., was first with forty-eight Fancy Pansies, and also with twenty-four, exhibiting large, substantial, and fresh flowers. The second and third prizes went to Messrs. J. Smellie, Paul & Co. (Bridge of Weir), and A. Lester. Mr. Smellie was first with twenty-four Shows, having a beautifully smooth and even stand; Mr. Lister was second. In the amateurs' class for twenty-four Fancies the prizes went to Messrs. Mann, Archer, and Mitchell in the order of their names; and in that for twelve, to Messrs. Thornton (who had grand flowers), Hall, and Illingworth. Mr. Thornton also won with twelve Shows; while in the special class for twenty-four Fancies Mr. Mann was victorious with a beautiful stand. There was one class for Violas, twenty-four sprays being asked for. Mr. John Smellie was first with a delightful stand, including the new seedling Mahogany, to which a certificate of merit was awarded. Messrs. Paul & Co. were second, and Mr. Hutchinson third.

#### FRUIT AND VEGETABLES.

There was an extensive and excellent display of fruit. The principal class was for ten distinct varieties, and Mr. J. McIndoe was successful with a splendid collection, containing Black Hamburg Grapes, good but not perfectly coloured; Musa Cavendishi, fair Foster's Seedling Grapes, good Early Transparent Gage Plums, fine Goshawk and Violette Hâtive Peaches, Stanwick Elruge Nectarines, Brown Turkey Figs, a fine Highcross Hybrid Melon, and a good Queen Pine. Mr. R. Parker, gardener to J. Corbett, Esq., was second with good Grapes and Figs and a splendid dish of Dr. Hogg Strawberries. Mr. Edmunds was third. Mr. Bannerman, gardener to Lord Bagot, came to the front with six varieties, having excellent Peaches (Royal George), good Nectarines (Lord Napier), and fair Grapes. Mr. McIndoe was a good second, and Mr. Tullet, gardener to Lord Barnard, third. Mr. Bannerman led again with four varieties, Pines excluded, his collection including a splendid dish of Royal George Peaches. Mr. Leadbetter was second, Mr. McIndoe third, and Mr. Crawford fourth. Mr. Parker was first with a Pine Apple; Mr. Woods, gardener to F. Foljambe, Esq., being second, and Mr. McIndoe third. Grapes were very good on the whole. Mr. J. Johnson won from eight opponents with Black Hamburg, his being as black as Sloes. Mr. McIndoe was second, larger in bunch but smaller in berry. Mr. Wallis, gardener to Sir H. Meysey Thompson, third, and Mr. Allsopp, gardener to Lord Hotham, fourth, Mr. Bannerman being commended. There were eight stands of Whites, Mr. Anderson winning easily with Buckland Sweetwater, splendidly coloured; Mr. G. Anderson, gardener to A. Milnthorpe, Esq., second; Mr. A. F. Pike third, and Mr. McIndoe fourth. Mr. Bannerman won easily with Peaches, having a splendid dish of Royal George. Mr. Divers, gardener to J. T. Hopwood, Esq., was second, Mr. Wallis third, and Mr. McLean fourth. The prizes for Nectarines went to Mr. Divers, Mr. Slade, Mr. Leadbetter and Mr. Parker. Melons were very good indeed. Mr. McIntyre was first with scarlet, green and also white fleshed, other prizes going to Messrs. Riddell, Wenman, Crawford, Le Pelley, Wallis, and Tullet. The best Figs came from Mr. Bannerman, and the best Cherries from Mr. Divers, who had a splendid dish of Monstruse de Mezel. Mr. R. Anderson was the leading exhibitor of Strawberries, Messrs. Wenman and Divers also having good fruit.

Excellent Tomatoes were exhibited by Messrs. Allsopp, McIntyre, Park, and Wenman, who took the prizes in the order of their names. Messrs. Sutton & Sons and Messrs. Webb & Sons offered special prizes for vegetables. In the class for the Reading prizes Mr. McIndoe was first, having excellent Suttons' First Crop Cauliflowers, Magnum Bonum Peas, Triumph Beans, Long Cream Marrow, Al Tomatoes, and Matchless Cucumber. Mr. Crawford was a good second, Mr. Knight third, and Mr. Smallwood fourth. Mr. Crawford secured the first of the Woodsley prizes with an excellent collection, comprising Walcheren Cauliflowers, Stratagem Peas, Sensation Tomatoes, Purple Argenteuil Asparagus, Market Favourite Carrots, and Snowdrop Potatoes. Mr. McIndoe was second. Mr. Laxton's prize for a dish of Gradus Pea was won by Mr. Smallwood.

#### MISCELLANEOUS.

There were numerous miscellaneous exhibits, and for several of the stands medals and certificates were awarded. Messrs. W. & J. Birkenhead had one of their characteristic displays of Ferns, comprising both popular and rare forms. Messrs. J. Backhouse & Co. arranged a miniature rock garden, backed by Conifers. It was tastefully put together, and much admired. They also had a stand of hardy flowers. Messrs. E. D. Shuttleworth contributed a most attractive stand of greenhouse and stove plants, Roses, and hardy cut flowers. Mr. Alex. Lister, Messrs. Paul & Co., Bridge of Weir, and Messrs. Cocker & Co. had beautiful stands of Pansies and Violas. Mr. J. Forbes also had a bright collection. Messrs. R. Smith & Co. contributed a beautiful group of Irises, Delphiniums, Spiraeas, and Clematises. Messrs. W. Cutbush & Son sent a collection of Malmaison Carnations and other plants, together with a brilliant display of hardy flowers. Mr. B. R. Davis was represented by stands of his well-known strain of Tuberous Begonias. Messrs. F. Sander & Co.'s resources were drawn upon for a charming assortment of Orchids and new and rare plants, amongst the latter being Alocasia Watsoniana, Strobilanthes Dyerianus, Dracaena Sanderiana. Messrs. Charlesworth, Shuttleworth, & Co. also had a



brilliant and tastefully arranged group of Orchids. Mr. Colchester had a stand of his Ichthem guano, and Messrs. Hood & Co. of bracket plaques for cut flowers.

### ISLE OF WIGHT ROSE SOCIETY'S SHOW.

JUNE 15TH.

ON Thursday, June 15th, at Newport, Isle of Wight, in the Vicarage grounds, lent by the Rev. Clementi Smith, the first meeting of this Society was held, and it proved to be most successful both as regards the exhibits and the attendance. Her Majesty the Queen, who is the Patroness of the Society, has shown a very great and practical interest in the Society's welfare, and promised a gold medal each year for twenty-four distinct Roses grown in the island. The Show was opened with some ceremony by the Mayor of Newport and Sir Warrington Simeon, and a large number of the local gentry were present, the fine band of the 3rd Battalion King's Royal Rifles (late 60th Regiment) much adding to the pleasure of those present.

The exhibits were arranged in two *marquées*. In the All-England classes the principal exhibitors were Mr. Frank Cant of Colchester, Mr. Charles Grahame of Croydon, Mr. R. C. West of Reigate, Captain Ramsay of Fareham, Dr. Seaton of Hants, and Mr. C. S. Cuthell of Dorking, who may be said to have taken the principal prizes in the order named, Mr. Cant taking four firsts and a second, and Mr. Grahame one first and three seconds. Mr. Cant's exhibits were for twenty-four distinct:—Gustave Piganeau, Caroline Kuster, Maréchal Niel, Général Jacqueminot, Marie Baumann, Medea, Devonensis, Marie Van Houtte, Prince Arthur, Boieldieu, Madame de Watteville, Prince Camille de Rohan, Hon. E. Gifford, A. K. Williams, Ulrich Brunner, Niphetos, Dupuy Jamain, Souvenir de S. A. Prince, La France, Marchioness of Dufferin, Comte de Raimbaud, Horace Vernet, Lady M. Fitzwilliam, Madame Gabriel Luizet. Eight treble Teas:—Souvenir d'un Ami, Caroline Kuster, Souvenir de S. A. Prince, Cleopatra, Ernest Metz, Innocente Pirola, C. Mermet, Marie Van Houtte. Twelve Teas:—Cleopatra, Madame A. Etienne, Madame Cusin, Souvenir de Paul Neyron, Madame Bravy, Devonensis, Marie Van Houtte, Madame de Watteville, Etoile de Lyon, Comtesse de Nadaillac, Hon. E. Gifford, C. Mermet. Six Teas:—Hon. E. Gifford; (silver medal) best bloom, Madame G. Luizet.

In the classes only open to the island growers, the Queen's gold medal was taken by Mr. Brook of Ryde, and the silver challenge cup by the Rev. G. Jeans, the local Secretary of the N.R.S., who has had the brunt of the work in arranging this meeting, and whose energetic services were rewarded by the satisfaction expressed by the exhibitors. Any small drawbacks of a first Show will be rectified by greater experience in the future. We heartily congratulate the Committee on their first effort being so successful.

### NATIONAL ROSE SOCIETY.

EXHIBITION OF TEAS AND NOISETTES.—JUNE 20TH.

NOTWITHSTANDING the prolonged drought, there was a fair display of Tea and Noisette Roses at the above Exhibition, held at the Drill Hall, Westminster, although in some cases the blooms lacked stability and size. Still, taken as a whole, these were better than was generally anticipated, and the competition was fairly keen. Appended are the names of the prizewinners and the varieties they staged.

In the class for twenty-four single trusses, not less than twelve varieties or more than three trusses of any one variety, Mr. J. Bradbury, gardener to S. P. Budd, Esq., 8, Gay Street, Bath, was awarded the first prize for a really grand exhibit. The varieties staged were Comtesse de Nadaillac, Maréchal Niel, Souvenir d'Elise, Souvenir d'un Ami, La Boule d'Or, Jean Ducher, Princess of Wales, Etoile de Lyon, Souvenir de Thérèse Levét, Princess Vera, Catherine Mermet, Ethel Brownlow, Marie Van Houtte, Cleopatra, Madame Cusin, and Comtesse Panisse. R. L. Knight, Esq., Bobbing, Sittingbourne, was placed second with a very creditable exhibit; and H. V. Machin, Esq., Gateford Hill, Worksop, third. The competition in this class was keen, six growers competing. For twelve single trusses, not less than nine distinct varieties or more than two blooms of any one kind, the Rev. A. Foster Melliar, Sproughton Rectory, Ipswich, was first, staging Souvenir d'Elise Vardon, Comtesse Panisse, Ernest Metz, La Boule d'Or, Marie Van Houtte, Comtesse de Nadaillac, Souvenir d'un Ami, Madame Angele Jacquier, Souvenir de Thérèse Levét, Anna Ollivier, and Catherine Mermet. E. B. Lindsell, Esq., Bearton, Hitchin, was second, and O. G. Orpen, Esq., West Bergholt, Colchester, third.

C. J. Grahame, Esq., Coombe Road, Croydon, was first in the class for six single trusses, not less than four distinct varieties. This exhibit included Ethel Brownlow (excellent), Innocente Pirola, Comtesse de Nadaillac (good), Francisca Kruger (fine), and Hon. Edith Gifford. Rivers H. Langton, Esq., Raymead, Hendon, was second with a beautiful stand; and Mr. Croft, gardener to W. D. Freshfield, Esq., The Wilderness, Reigate, third. There were seven competitors in this class. The Rev. A. Foster Melliar was placed first in the class for six trusses of any one variety, showing Souvenir d'Elise Vardon in perfect form. Edward Mawley, Esq., Rosebank, Berkhamsted, was second with Innocente Pirola; and Dr. King, Gayton Rectory, Blisworth, third with Caroline Kuster. E. B. Lindsell, Esq., was first in the class for six distinct varieties, three trusses of each, staging Souvenir d'Elise,

Comtesse de Nadaillac, Caroline Kuster, Jean Ducher, Innocente Pirola, and Etoile de Lyon. The Rev. F. R. Burnside was second, and H. V. Machin, Esq., third. In the class for a decorative arrangement of Tea and Noisette Roses, Mrs. O. G. Orpen, West Bergholt, Colchester, was very deservedly awarded the first prize for an admirable arrangement. Miss Agnes A. Bloxam, Eltham Court, Eltham, was second, and Mrs. Edward Mawley, Rosebank, Berkhamsted, third.

Mr. Frank Cant, Colchester, was first in the open class for twenty-four distinct varieties, showing very fine blooms of Ernest Metz, Niphetos, Souvenir d'Elise Vardon, Innocente Pirola, Madame de Watteville, The Bride, Cleopatra, Anna Ollivier, Comtesse de Nadaillac, Madame Cusin, Catherine Mermet, Madame Bravy, Ethel Brownlow, Caroline Kuster, Souvenir d'un Ami, Madame Hoste, Madame A. Etienne, Princess of Wales, Rubens, Marie Van Houtte, Madame Hippolyte Jamain, L. B. Varonne, La Boule d'Or, and Souvenir de S. A. Prince. Mr. B. R. Cant was second, and Messrs. D. Prior & Son third. In the class for twelve distinct varieties, three trusses of each, Mr. Frank Cant was again first with Cleopatra, Madame Hoste, Marie Van Houtte, Comtesse de Nadaillac, Madame de Watteville, Ernest Metz, The Bride, Souvenir d'Elise Vardon, Innocente Pirola, Madame Cusin, Souvenir de S. A. Prince, and Catherine Mermet. Messrs. D. Prior and Son were second, and Mr. Geo. Mount third.

For eighteen bunches of Roses, distinct, three trusses in each bunch, Messrs. G. Paul & Son, Old Nurseries, Cheshunt, were first. This stand included L'Idéale, Belle Lyonnaise, Bouquet d'Or, Jean Ducher, and Madame Cusin amongst others. Mr. Geo. Mount, Rose Nurseries, Canterbury, was second with a very fine exhibit. Messrs. D. Prior and Son were placed first in the class for twelve blooms of Maréchal Niel. O. G. Orpen, Esq., being second; and A. H. Gray, Esq., Beaulieu, Newbridge, near Bath, third. Mr. Frank Cant, Braiswick, Colchester, was first in the class for twelve single blooms, one variety. He staged magnificent examples of Souvenir d'Elise Vardon. Messrs. D. Prior and Son, Colchester, were second with Niphetos in good form, and Mr. B. R. Cant, Colchester, third with Comtesse de Nadaillac.

The best bloom in the Show was in a stand of the Rev. A. Foster Melliar, and was a perfect specimen of Souvenir d'Elise Vardon.



### FRUIT FORCING.

**Figs.**—*Early-forced Planted-out Trees.*—The second-crop fruits on trees started at the new year are now a good size, they being about three weeks earlier than usual, and if judiciously thinned there will be a crop of fine delicious Figs. If the crop is heavy reduce to eight or nine fruits of the small, five or six of the medium-sized, and three or four of the large fruited varieties to each square foot of trellis covered by the trees or exposed to full sunshine, leaving the most forward at the base of the shoots, which will ripen earlier and attain greater perfection than those near the points. These parts should be kept free from fruit, and be allowed to grow up to the light. This is necessary to secure well ripened wood so as to ensure a full first crop the following season, the trees being at rest by the middle of October. If the borders have been allowed to get dry they must be watered repeatedly until the soil is thoroughly moistened. Liquid manure will be required by trees having their roots in borders of limited extent, and more frequently than by trees with a large extent of rooting area; about once a week in the first case, and every fortnight in the other, giving thorough supplies, and always in a tepid state. A light mulching replenished from time to time will encourage surface roots, and a sprinkling of artificial manure on the border and washed in will assist the Figs to swell.

Syringing must be practised twice daily, except in dull wet weather. If red spider gains a footing it must be dislodged by syringing the trees with a soft soap solution, 2 ozs. to a gallon of water, and scale may be removed from the wood by using a brush. Painting the hot-water pipes with sulphur is an effectual remedy for red spider. Artificial heat will not now be necessary unless the weather suddenly becomes cold and wet, then fire heat will be needed to maintain a night temperature of 60° to 65°, and 70° to 75° by day. Ventilate early, especially on clear mornings, and close sufficiently early to run up to 85° or 90°, or even 95° to 100°, providing plenty of atmospheric moisture.

*Succession Fig Houses.*—When the fruit gives the least indications of ripening by changing colour, afford more air, insuring a circulation constantly by keeping the top and bottom ventilators open a little. Reduce the atmospheric moisture gradually, and expose the fruits as much as possible to the full influence of light and air. Lessened supplies of water will be needed at the roots, but they must not be allowed to suffer. If red spider be troublesome a thorough washing may be given the trees after the fruit has been closely picked, and this repeated each time the fruit is gathered will keep the pest under until the crop is cleared, when more effectual means can be employed for its eradication. It must be done early on a fine day, and the water be soft, clear,



and tepid; then the fruit will not be deteriorated, otherwise the fruit may be discoloured and acquire a musty flavour.

**Trees Swelling their Crops.**—A mulching of short manure will act as a source of nourishment, uniform moisture in the border, favouring surface roots, which in an active state can be fed with top-dressings of phosphatic and potassic manures to any extent without unduly exciting growth. A handful per square yard of five parts dissolved bones, two parts powdered saltpetre, and three parts ground gypsum, mixed, will assist Figs to mature heavy crops of fruit and make sturdy, healthy, fruitful wood. Syringe twice a day in fine weather, always early in the afternoon, closing the house at the same time, and so as to gain enough sun heat to rise to 90° or 100. The fruit will then swell to a good size, and rest being insured at night by allowing the temperature to fall to a safe minimum the trees will be capable of performing a long day's work.

**Late Houses.**—Trees against walls covered with glass often grow rampantly, and root-pruning affords little better results as regards fruit, because the trees are too far from the glass. In such it is better to allow them to grow up with one or more stems to the roof and then train the growths to a trellis about 1 foot from the glass and down the slope. The sun then shines into the points of the shoots and they push Figs at nearly every joint. Keep the growths thin, stop at the fifth leaf, that is, side growths, and mulch and water the borders. Ventilate early, and utilise sun heat by early closing, feeding according to the requirements. The trees will ripen one full crop in August, and the second crop Figs being removed and the shoots allowed to grow up to the light so as to get their points well ripened, a full crop may be relied on another year.

**Young Trees in Pots for Early Forcing.**—These must now be in the pots in which they are to fruit and on no account be neglected. Afford all the light possible, and keep the trees well syringed and supplied with liquid manure so as to insure a clean, sturdy, well-nourished growth. When that is complete they should have abundant ventilation so as to ripen it thoroughly. Stopping must not be practised after this date. When the growth is matured the trees may be placed outdoors in a sunny place, but in dull and wet weather means should be at command for warding off heavy rains.

**Vines.**—**Early forced Vines.**—When the Grapes have been cut the Vines must be syringed and, if necessary, apply an insecticide. The syringing should be repeated occasionally so as to preserve the old foliage as long as possible, and encourage a moderate extension of the laterals, especially in the case of weakly Vines and those long subjected to early forcing. Ventilate to the fullest extent day and night, but it is not desirable to remove the roof lights unless they can readily be replaced in case of heavy rains. This is particularly essential where it is intended to lift the Vines and lay the roots in fresh compost, as a wet soil is not favourable to the Vines for lifting.

**Grapes Colouring.**—Those changing colour will require plenty of air, with the needful warmth—70° to 75° by artificial means, affording them rest at night by allowing the temperature to fall to 60°. A thorough supply of water to the border and a mulch of short sweet material, say an inch or two of stable litter freed of the coarser strawy portion, will lessen the need of water. A moderate moist atmosphere must still be afforded by damping occasionally, and it will not do any harm to the Grapes provided air is admitted so as to prevent its deposition on the berries. Muscats must not lack water at the roots, and it will not prejudice the Grapes if air is freely admitted.

**Late Houses.**—Examine the bunches for the last time in thinning, removing any superfluous and stoneless berries, and taking out those in the centres of the clusters, allowing rather more room between the berries than for midseason Grapes. High and dry borders require large quantities of water and liberal top-dressings of artificial manures, with a light mulch to keep the surface uniformly moist, but avoid thick coatings of wet manure. With supplies of nourishment at the roots and damping surfaces at closing time red spider will not appear. Keep the Vines free from gross laterals, not allowing a large quantity of growth to be made, which must afterwards be removed. Leave a little air on at night at the top of the house, and increase it early in the morning, but allow a rise to 80° to 85°, closing so as to run up to 90° or 95°, with abundant atmospheric moisture in the afternoon. Fire heat will only be necessary to maintain a night temperature of 60° to 65°, and 70° to 75° by day, ventilating in dull weather so as to insure a change of air at least once in twenty-four hours.

**Young Vines.**—Syringe copiously early in the afternoon of fine days and close so as to husband the sun's heat, mulching the border to keep the surface moist, affording water or liquid manure when necessary. Stop laterals to one leaf, then the sub-laterals may be allowed to extend on permanent Vines, but on supernumeraries the canes should be stopped when about 9 feet in length, the laterals at the first leaf, and the sub-laterals to one joint as made, keeping them clear of the principal or cane leaves. The latter must be kept clear and allowed to die off naturally, so that the buds at their base may be well formed and nourished.

#### THE KITCHEN GARDEN.

**Tomatoes.**—Already those planted against sunny walls and fences as well as in the open ground have made excellent progress, the first clusters of fruit being set on all that have been kept moist at the roots. Where the flowers that open first fail to set it is evidently due to neglect, the old ball of soil and roots being allowed to become dust dry during the first fortnight after planting. Still keep them uniformly moist at the roots, and if a mulch of short manure or leaf soil is given

this will lessen the need for watering so often. Training the plants should not be deferred till the stems become too stout and brittle to stand being straightened, nor ought any superfluous growth to remain on them to such a time as to need cutting away. Pinch out all side shoots as fast as they form, the exception to this rule being when there is room for one or more leading growths to be laid in a foot apart, enough being saved at the first pinching to meet the case. Plants confined to a single stem or otherwise may be laid in either uprightly or obliquely, according to the head room, and if the fastening back or tying to stakes is done once a week there will be no breaking down of stems or branches.

**Early Potatoes.**—Owing to the excessive heat and long drought early Potatoes are maturing more quickly than is desirable, the crops being light accordingly. This, as far as Ashleafs and other extra early varieties are concerned, is an advantage. After drought has once caused a check to tuber growth, a change to wet weather, or even a moderate amount of rain on a single day, will start them "growing out," the former also being most probably a precursor of disease. In anticipation of this either lift the crops or draw the haulm before the latter is actually ripe. When the haulm falls about the rows constantly the tubers are quite fit for lifting and storing. By standing on the rows the haulm can be drawn without disturbing the crop underneath.

**Saving Potatoes for Seed.**—Short-topped, quick-maturing varieties of Potatoes ought always to be extensively grown in private gardens, and would be far more than they usually are if only enough tubers were available at planting time. The initial mistake is in using the early varieties too closely every season. This summer there will be less need for doing this owing to the second early varieties being also ready for use. Try some of these latter, and if appreciated save the earlier varieties for seed purposes. Supposing these latter have ceased growing lifting may be commenced at once. Sort over the crop, saving all the medium-sized tubers for storing thinly in a cool light shed or room, the rest being used. Avoid any attempt at greening the seed tubers in the open, as this may invite an attack of disease.

**Crops to Succeed Potatoes.**—According as Potatoes are lifted the space between the rows should also be loosened with a fork, all clods being broken, and the surface generally left in a finely divided level state. It will then be easily made ready for any succeeding crop, and moisture also, to a certain extent, prevented being drawn out. Good successional crops to Potatoes on early borders are Strawberries, Carrots for drawing young, late Kidney Beans, Lettuce, and Endive. In the open quarters Strawberries, late Peas, Broccoli, Borecole, Savoy, Coleworts, Leeks, Endive, winter Spinach, and Turnips might all be put out in succession to early and second early Potatoes. For either Strawberries, or any member of the Brassica family, the ground should be well trampled, and if very dry drills may be opened and soaked with water prior to planting. It is useless to sow seeds on dry ground during the summer, but if the drills opened for them are well moistened before they are sown germination will soon take place.

**Cabbages and Coleworts.**—The former present a very poor appearance, especially on unfertile soils, and if planted on the level or not moulded up it is a difficult matter to supply them with the requisite moisture at the roots. Any late planted should have a good soaking of water, after which the soil may well be drawn up to them from each side. In the furrows thus formed between the rows pour water or liquid manure, notably sewage, rather freely, and a rapid growth of Cabbages will be the result. There is every likelihood of green vegetables being scarce next winter owing to the loss of Broccoli, Borecole, and Savoy plants from attacks of the Turnip flea, and a good supply of Coleworts would be very acceptable. Sow seed of the Rosette, Shilling's Queen, Little Pixie, or other preferred varieties, and later on put in the plants thickly wherever room can be found for them.

**Young Carrots.**—There is always a demand for these, and if seed is sown now of any of the stump-rooted varieties as well as what may be left of Intermediates, it will most likely be the means of providing a long supply of tender young roots throughout the autumn and early winter. Grubs are the worst enemy to this crop, and after drills have been opened 9 inches apart on fine light ground and duly watered sow wood ashes thinly with the seed.

**Late Peas.**—A few late dishes are quite as much appreciated as very early ones, and if room can be spared an attempt should be made to grow some. Ne Plus Ultra, Omega, Latest of All, and Veitch's Perfection are among the best for present sowing, the first-named being the favourite late variety. If 6-feet spaces are left between Celery trenches these suit late Peas surprisingly well, and they will also thrive admirably on freely manured deeply dug ground if kept moist at the roots during the first few weeks. Avoid low ground, as it is there where early frosts do the most damage. Open rather deep drills, well soak with water, and cover the seed with not less than 2 inches of soil. Peas that are already sown and up should be kept regularly moist at the roots, or mildew and other evils will quickly put in an appearance. Such crops ought to have thorough soakings every few days, dribblets being simply thrown away; also mulch heavily with strawy manure.

#### TRADE CATALOGUES RECEIVED.

Herb & Wulc, Naples.—*Flower Bulbs, Roots, and Terrestrial Orchids.*

Ant. Roozen & Son, Overveen, Haarlem.—*Dutch and Cape Bulbs.*



# THE BEE-KEEPER.

## APIARIAN NOTES.

### THE WEATHER AND BEES.

TILL the beginning of the second week of June the drought was doing no injury, but a dry north-east wind since has caused many plants to suffer, preventing the secretion of honey to the extent bee-keepers desire. Nevertheless we cannot complain. Although not yet at the usual supering time by several weeks many are not only on, but are near completion. For the purpose of making clear the working of my hives I have classed them into three sections. The first were early swarmers, which I made no attempt to control. The second, a little later, I allowed to swarm once, preventing after swarms by excising all queen cells on or about the eighth day subsequent to the first swarm, stocks and swarms all working in their supers. The others are what I wish to be non-swarmer. These are very strong, and have one tier of supers well forward. Singular to say, the last-named, with one exception, a crossed Syrian, the best hive in my apiary, which has never been fed since the bees were put into the hive years ago, are Punics, proving that they enter supers freely and do not swarm readily while they have plenty of room.

### PUNICS AND WEIGHT OF HIVES.

A pure Punic has bred to a great extent for the three seasons I have had her, and is still alive, although it was supposed she was a year or more old when I obtained her. The bees swarmed on June 13th, and are working and carrying in honey to a considerable extent, disproving the statement "they gathered no honey." They have not robbed others this season, such as Italians are doing, while they are not so bad-tempered as some other varieties.

The honey gathered this season does not lose in weight as it did last year. With a copious rain, and ten days' mild weather any time during the next month the yield of honey will be great. I have weighed one medium swarm, and its gross weight is 75 lbs., and the nett contents of the hive 35 lbs. About half a mile distant from me, at Sydes Cottage, a few minutes' walk from High Blantyre station, is a swarm of crossed Punics, swarmed and hived on June 1st, which on the evening of the 15th, when weighed, turned the scale at 94 lbs., the nett contents of the hive being 74 lbs. Any person is welcome to visit the place and see for themselves the accuracy of the statement.

### INDUCING BEES INTO SUPERS.

Last week I made allusion to the old method, which I have often referred to, of giving bees supers under the brood nest at first to prevent swarming, and by utilising the combs as supers thus hurrying on that work. Dr. C. C. Miller in "Gleanings" says, "Simmins has made a decided improvement in the non-swarmer plan. Formerly the system was to have the bees always building comb between the brood nest and the entrance; as fast as the bees built the comb, cutting it out and fitting it into sections. Now he puts sections under instead of brood combs, then raises the sections when well started."

Supers following the first ones will be put uppermost, unless where they are small in four or two sections. In these cases half of the partly full supers will be lifted and put on the other half, empty ones taking the place of those that are moved.

### THE HEATHER.

With so much heat and sunshine, and little rain, the Heather has made long growths, is early, and very promising. The preparations for taking the bees to it will be earlier than is usually the case. Take every precaution to prevent smothering, ventilating floors, with an upward current for the escape of the heated air, shallow combs, gentle handling, and with flexible springs on the vehicle the hives in most cases will travel long distances with perfect safety. When a hive shows signs of distress from over-heating sprinkling a little cold water upon it will have a good effect.

I never send bees to the moors with partly filled supers. Do not let bees crowd. If at any time the bees incline to "lie out" give extra space at once. Feeding with advanced hives is a thing of the past; still, if there are any late swarms, and the weather unfavourable, feed a little. Sometimes this applies to hives deprived of their honey.—A. LANARKSHIRE BEE-KEEPER.



## TO CORRESPONDENTS

All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Disfigured Peach Leaves (W. M.).**—The box containing the leaves came to hand too late for a thorough examination this week. The matter shall be fully dealt with in our next issue.

**Scabbed Potatoes (Constant Reader).**—A reply to your query was given on page 449 of the *Journal of Horticulture* for June 1st. No flower came to hand with the Potato, otherwise it would have been named.

**Preventing Earwigs Eating Apricots (Apricot).**—The earwigs are best trapped before the fruit commences to ripen. Beanstalks or hollow stems of any kind of plant, if cut into lengths of from 6 to 9 inches, and placed in the branches of the tree, will catch a large number. Small flower pots, partly filled with dry moss, and either inverted or laid on their sides in the forks of the tree, may also be used effectively. In either case the traps must be frequently examined, and the earwigs shaken out into a vessel containing boiling water. By commencing early, and attending well to the traps, the earwigs may be captured, and the crop of fruit saved.

**Names of Insects (J. D. Duffreyn).**—Other food being inaccessible, the larva enclosed in your box assailed its companions, and devoured the greater part of the beetle's body, also some portions of the moth. Owing to this the beetle cannot be identified. It would seem to be a species of weevil, and was doubtless engaged in sucking the juices of the Grapes. The moth is the species called the small elephant (*Chœrocampa porcellus*), because the head of the caterpillar has been thought to resemble the elephant's trunk, or, according to other observers, the snout of a pig. It is rather a sluggish but pretty insect, and not very common. Your larva is the grub of the cockchafer beetle (*Melolontha vulgaris*), which has been noticed in several places this season, as doing much injury to the roots of various plants. It feeds slowly, pursuing its destructive work for some years.

**Todea superba (A. M.).**—It should be grown in a pot well drained, using a compost of three parts fibrous peat, one part yellow loam, and a half part each of sandstone or crocks broken rather small, and silver sand. The peat and sand ought to be torn up moderately small, and the whole must be well mixed; pot moderately firm. Keep the soil constantly moist, and place the plants in a cool shady part of the greenhouse. If the house be small the plants will do without a glass, but if not sufficiently close and moist it should be covered with a glass just resting within the rim of the pot, and if it has no hole in the top it should be taken off and wiped dry once daily. The plants should be gently sprinkled with water once a day in bright weather through a very fine-rosed can. The plants having the requisite moisture, the fronds will be covered with minute dewdrop-like spots of water in the morning if the glass is tilted a little on one side at night.

**Scutellaria macrantha (Amateur).**—This is a native of Eastern Asia, and appears to be widely spread, extending, according to Sir William Hooker, to the great wall of China, where it was detected by Sir George Staunton. It is perfectly hardy and of easy cultivation and increase. It is an herbaceous perennial, scarcely exceeding 1 foot in height, with angular, branching stems, and opposite, entire, lance-shaped leaves, and forming when sufficiently strong a spreading bushy tuft. The very handsome purple flowers are produced in long terminal spikes. The plant seeds freely, and may be readily increased by these means as well as by division of the roots or by cuttings under a glass, either in the border or frame. Seedlings usually flower the first season if sown early, and should be transplanted from the seed pan while young, as they will suffer less from removal than at a more advanced state of their growth, when their tap-like root is more developed.

**Culture of *Pancratium fragrans* (S. R.).**—This beautiful plant requires a rather high temperature and a moist shady position; a stove heat of 70° in summer and 60° in winter should be the minimum. Your plants should be shifted as soon as they fill their pots with roots. When the specimens are as large as required they must only be potted every



four years. Employ a compost of two parts fibry loam, one part charcoal, and one part silver sand and sheep droppings. The loam must be broken into pieces about the size of pigeon's eggs, the charcoal the same; when all has been turned two or three times it should then be run through a half-inch riddle, and what remains in the riddle place in the pots. In potting the soil should be rammed very firmly. In the stove they must be close to the glass, but shaded from the direct rays of the sun, and they should receive a bountiful supply of water in the summer both from the watering can and the syringe. Even during the winter the syringe must be more freely employed than for most stove plants, particularly so if the stove in which they are placed is not furnished with vapour appliances. They can be placed in a cool conservatory when in flower, and supplied with a little weak liquid manure; it prolongs their flowering season, and also imparts a much finer waxy appearance to the flowers—moreover, they last much longer in a cut state when subjected to this treatment.

**Souvenir de la Malmaison Carnations** (*L. T. P.*).—With very light adequately heated low span-roof houses, or pits for the plants in winter and spring, striking stout cuttings periodically, and growing the plants well, blooms may be had more or less plentifully throughout the year, but they cannot be relied on in the absence of adequate means for producing them, such as an ordinary greenhouse crowded with a variety of other plants that require different treatment. The plants may be grown in cool frames, or even in the open air, in the summer, and will then produce flower stems and buds that will expand in a very light house having a genial temperature between 50° and 60°. Established plants will flower from the present time till the autumn, and strong cuttings rooted now will, if well grown, flower in the winter and spring. A supply of blooms cannot be had all the year round, from, say, a dozen plants all in the same stage of development. Carnations are best produced in the winter in houses that are practically devoted to the culture of the plants, and it is in this respect that growers of flowers for market have the advantage over the majority of private gardeners and amateurs, whose glass accommodation is limited, and who have to grow a great variety of plants together in the best way they can. It does not follow, then, that because blooms of the Carnation in question can be had all the year round that it is in the power of all cultivators to produce them.

**Cephalotus follicularis** (*A. D. F.*).—This pretty and interesting little plant is a native of Australia, where it was first discovered by Labillardiere, who described and figured it; subsequently Mr. Robert Brown also found a specimen during his voyage with Captain Flinders. It was first cultivated in England about 1822, and is now by no means a rarity. The plant is remarkable in several ways, for it is the only species of the genus, and is considered sufficiently distinct to constitute a natural order (allied to the Polygonums), and we thus have the peculiarity of a family composed of one individual. In the leaves, too, we find another singular feature—some are flat and elliptical in form, while others are converted into extremely neat and pretty little pitchers or ascidia, somewhat resembling those of *Nepenthes*, only much smaller. They are dark green with a purplish shading, and pink veins, and are furnished with small lids, the mouth of the pitcher being bordered with a dark-coloured furrowed ring. This *Cephalotus* is an inhabitant of marshy land; it should therefore be provided with a soil composed of peat and live sphagnum moss, the pot being well drained and placed in a shallow pan containing water. If the plant is grown in a pan, that should be placed inside another larger one, the space being filled with fine Derbyshire spar and kept constantly moist. In either case a bellglass should be placed over the plant. The best position and temperature is the cool end of the stove or Orchid house, where with careful attention in supplying the requisite moisture the plant will grow freely.

**Fuchsias and Pelargoniums for Autumn** (*Novice*).—All the varieties mentioned in your letter are suitable. Grow the Fuchsias in unheated frames in a shaded position, removing the lights on favourable occasions from now to September, and especially at night for the benefit of the night dew; indeed, the plants will only require protection from sun and heavy rains. Some of the finest we have seen were grown outdoors during July and August, the pots partially plunged in ashes on the north side of a wall. The plants must be kept growing freely, repotting them as may be needed to ensure this, and watering and syringing them regularly. If the wood is allowed to get hard you cannot well retard them. Pinch the shoots as they extend 4 or 5 inches, and permit no flowers to expand till September. The plants must never be root-bound until they are placed in the pots in which they are intended to flower, or the wood will ripen prematurely. When the plants are near flowering clear liquid manure, such as soot water, will be very beneficial. The young plants to which you allude are quite amenable to the treatment indicated, and old plants that flower in July, if pruned slightly, repotted, and grown in the same manner, will flower again in the autumn. Zonal Pelargoniums grown practically in the same way, only in a sunny position, will flower equally well late in the season, young plants producing the finest trusses, old ones affording them the most freely but smaller. Plants that flowered in June, then cut down, and a fortnight afterwards shaken out and repotted, will flower freely in the autumn. Young plants may be topped occasionally till the middle of August, and then have the flower buds picked off if earlier than you wish them. They must not be starved at any time, but

be kept supplied with water as needed to promote healthy growth, giving weak liquid manure occasionally when the pots are crowded with roots and the flowers are forming freely.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*G. E.*).—2, *Sisyrinchium striatum*; the rest were insufficient specimens, being impossible to identify, and were, moreover, badly packed. (*F. D.*).—1, *Saxifraga Camposi*; 2, *S. MacNabiana*. (*L. M.*).—*Adiantum amabile*. (*D. B.*).—*Alocasia metallica*.

## COVENT GARDEN MARKET.—JUNE 21ST.

HEAVY supplies, with indoor fruit lower

### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, half sieve .. ..	0	0	0	0	Grapes per lb. .. ..	1	6	2	6
„ Tasmanian, per case	6	0	12	0	Lemons, case .. ..	10	0	15	0
„ Nova Scotia, per barrel .. ..	0	0	0	0	Oranges, per 100 .. ..	4	0	9	0
Cherries, half sieve .. ..	5	0	8	6	Peaches, per doz. .. ..	1	6	8	0
Gooseberries, half sieve ..	1	6	2	0	St. Michael Pines, each	2	0	5	0
					Strawberries, per lb. ..	0	4	1	0

### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle ..	1	6	4	0	Mustard and Oress, punnet	0	2	0	0
Beans, Kidney, per lb. ..	0	6	1	0	Onions, bunch .. ..	0	3	0	5
Beet, Red, dozen .. ..	1	0	0	0	Parsley, dozen bunches ..	2	0	3	0
Carrots, bunch .. ..	0	4	0	0	Parsnips, dozen .. ..	1	0	0	0
Cauliflowers, dozen .. ..	2	0	3	0	Potatoes, per cwt. .. ..	2	0	5	0
Celery, bundle .. ..	1	0	1	3	„ new .. ..	5	0	10	0
Coleworts, dozen bunches	2	0	4	0	Salsify, bundle .. ..	1	0	1	6
Cucumbers, dozen .. ..	1	6	3	0	Scorzonera, bundle .. ..	1	6	0	0
Endive, dozen .. ..	1	3	1	6	Seakale, per basket .. ..	0	0	0	0
Herbs, bunch .. ..	0	3	0	0	Shallots, per lb. .. ..	0	3	0	0
Leeks, bunch .. ..	0	2	0	0	Spinach, bushel .. ..	3	0	3	6
Lettuce, dozen .. ..	0	9	1	0	Tomatoes, per lb. .. ..	0	4	0	8
Mushrooms, punnet .. ..	0	9	1	0	Turnips, bunch .. ..	0	0	0	0

## AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	3	0	Mignonette, 12 bunches ..	3	0	6	0
Bouvardias, bunch .. ..	0	6	1	0	Myosotis, dozen bunches ..	1	6	3	0
Calceolaria, dozen bunches	4	0	6	0	Orchids, per dozen blooms	3	0	12	6
Carnations, 12 blooms ..	1	0	3	0	Pelargoniums, 12 bunches	6	0	9	0
Caruations, dozen bunches	3	0	6	0	Pelargoniums, scarlet, doz.				
Cornflower, dozen bunches	2	0	3	0	bunches .. ..	3	0	6	0
Eucharis, dozen .. ..	3	0	4	0	Pinks, dozen bunches ....	1	6	4	0
Gardenias, per dozen ..	1	0	3	0	Primula (double) 12 sprays	0	9	1	0
Iris, various, doz. bunches	6	0	12	0	Pyrethrum, dozen bunches	2	0	6	0
Lilium candidum, dozen blooms .. ..	0	6	1	0	Roses (indoor), dozen ..	0	6	1	6
Lilium longiflorum 12 blooms .. ..	2	0	3	0	„ Red, doz. bunches ..	4	0	8	0
Maidenhair Fern, dozen bunches .. ..	4	0	6	0	„ Tea, white, dozen ..	1	0	2	0
Marguerites, 12 bunches ..	2	0	4	0	„ Yellow, dozen .. ..	2	0	4	0
					Spiraea, dozen bunches ..	3	0	6	0
					Sweet Sultan, doz. bunches	3	0	4	0
					Tuberose, 12 blooms ..	0	6	1	0

### PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	12	0	Lilium Harrissi, per dozen	12	0	24	0
Arum Lilies, per dozen ..	8	0	12	0	Lobelia, per doz. .. ..	4	0	6	0
Aspidistra, per dozen ..	18	0	36	0	Lycopodiums, per dozen ..	3	0	4	0
Aspidistra, specimen plant	5	0	10	6	Marguerite Daisy, dozen ..	6	0	12	0
Calceolaria, per dozen ..	4	0	6	0	Mignonette, per doz. ....	4	0	8	0
Dracena terminalis, dozen	18	0	42	0	Musk, per dozen .. ..	2	0	4	0
„ viridis, dozen .. ..	9	0	24	0	Myrtles, dozen .. ..	6	0	9	0
Ericas, various .. ..	12	0	24	0	Nasturtiums, per dozen ..	4	0	6	0
Euonymus, var., dozen ..	6	0	18	0	Palms, in var., each ..	1	0	15	0
Evergreen, in var., dozen	6	0	24	0	„ (specimens) .. ..	21	0	63	0
Ferns, in variety, dozen ..	4	0	18	0	Pelargoniums, per dozen ..	8	0	15	0
Ferns (small), per hundred	5	0	8	0	„ scarlet, per dozen ..	4	0	6	0
Ficus elastica, each .. ..	1	6	7	6	Petunia, per dozen .. ..	6	0	9	0
Foliage plants, var., each..	2	0	10	0	„ single, in boxes ..	1	6	3	0
Fuchsia, per dozen .. ..	6	0	12	0	Saxifrage .. ..	12	0	18	0
Ivy Geraniums .. ..	4	0	8	0	Spiraea, per dozen .. ..	6	0	12	0

Bedding plants in variety.

**SEED STANDS AT CHESTER.**—At the Royal Agricultural Society's Show at Chester, which closes on Friday night, Messrs. E. Webb & Sons have a very large stand, in which their choicest goods are well displayed, the enormous Swedes, Mangolds, white-fleshed and yellow-fleshed Turnips, prize Wheat and Barley exhibited by the firm attracting large crowds of practical agriculturists. Next to the Wordsley firm came Messrs. Sutton & Sons of Reading, whose specialties of Grasses, roots, cereals, and various agricultural, horticultural, and floricultural produce attracted a constant stream of visitors. Dicksons (Limited), Chester, too, have a grand display, their collection of well-known Grasses, Clovers, Oats, Barley, Wheat, and roots being visited by thousands of visitors, the attendants being kept as busy as bees. Messrs. James Carter & Co. have also a large collection of their various and well-known goods on view.





## TWO FARMS—A CONTRAST.

How much the ordinary farmer of this country is dependent upon seasonable rainfall has probably never been shown so clearly as now, in what is practically the fourth month of a spring and early summer drought. It is true that there has been some rain in certain localities, but no appreciable downfall since February. There has been an abnormally high temperature, and the effect of the combined drought and heat upon farm crops has been alike interesting and instructive. It has taught many useful lessons, and has certainly deepened the conviction that drought at any season of the year tells much more upon crops on poor neglected land than it does upon those having the benefit of rich soil in thorough cultivation.

Since writing our last home farm article we have been over many farms, several of them dairy farms, entirely in grass, and found much of the pasture eaten bare, and the hay crops practically a failure. At none of these farms is there anything done worthy of the name of systematic cultivation; the only manure is from the grazing stock, there is no sheep-folding, no use of chemical manure. This was the case, too, at a farm having the advantage of a few acres of arable land, all sown with corn; pasture and corn were alike in a wretched plight, the corn being also foul with coltsfoot and twitch grass. To tell the tenant how much better he might do whilst he is under the stress of such a time of drought, and straitened in means as he most probably is, would seem absolute mockery. What can be done for him? It is certain that the man who farmed well in good times has been able to hold his own in bad times—to continue fairly prosperous simply because he has continued to farm well. To the inferior farmer the difficulties of the situation become more and more pronounced, and even if he wished to try and do better it would hardly be possible to effect a radical change at once. It is certain, however, that arable land on such a farm should be cropped for stock-feeding, and not to produce corn for sale.

No contrast could be greater than the condition of the crops of another farm, entirely arable, and chiefly devoted to the cultivation of vegetables. There were fields of Cabbages, Onions, Peas, early Potatoes, Lettuces, and Parsnips, all in perfect health and vigour, without a sign of growth arrested or dwarfed by drought. The only crop on the farm which afforded any indication of such an influence was a fine field of Wheat, with short but very stout straw. It was a triumph of cultivation in such a season—not a weed to be seen, the surface well stirred, and the soil evidently full of manure. The importance of the lesson afforded by this vegetable farm cannot easily be over-rated. It plainly indicates how advantageously the principles of gardening may be applied to farming—not in bringing farm land generally under the cultivation of fruit and vegetables, but rather in bringing all soil that is worth cultivation up to a high standard of excellence. In doing this we must go back to the very rudiments of soil tillage, and for example take the case of a dairy farmer who intends trying to improve a certain meadow which is now bare of nutritious herbage, with the surface cracked and seamed with fissures caused by drought. He knows that in ordinary seasons it has always been termed wet, though it is an upland field, and a wise landlord will surely respond to his appeal for drainage in early autumn. With drains in full action sheep-folding may then follow at once; and if

about 4 cwt. per acre of basic slag is applied in the autumn as well, the pasture would be sufficiently stored with fertility to render it really productive next season. Slag at 2s. per cwt. is the cheapest form of phosphate application we have, and if applied in the autumn it does much good in the following spring and summer. With soil so rich in plant food as the meadow would be after such treatment, early growth in spring is assured, however cold or ungenial the weather may be.

For such folding any sheep will answer, but when a choice is possible we prefer either fine sturdy hoggets or really good draught ewes. These may always be had worth the money at autumn markets or fairs. If purchased with judgment they fatten well enough in folds to cover expenses even now. Sometimes they afford a fair profit, but it should be remembered that profit must be looked for in the pasture by its strong vigorous growth next season.

## WORK ON THE HOME FARM.

After sheep shearing comes the dipping, for which purpose we always use Cooper's preparation, only waiting till any wounds from the shearings are healed. Never was the dipping more important than in this hot dry season, flies being rampant everywhere. It is necessary to remind our readers in connection with this important matter, never to dip the ewes while they are suckling lambs; the lambs will imbibe the poison in the dip mixture and die. Wean them, and then dip the lambs too; all should then be safe from fly attacks for some time. Leave nothing to chance, however, but keep a watchful eye upon the flock. A fly-stricken sheep may easily be detected by its restlessness, and a quiet look round enables the farmer or shepherd to tell if all is well without handling the sheep. We have known serious harm done by inattention to the flock during haymaking. Never trust a boy to count or inspect the flock, however great the pressure of work may be; but let them be seen by an experienced man twice daily.

Look closely after cases of footrot in the flock. Trim diseased feet carefully, tenderly, and frequently, dressing the sores with Gell's ointment. By attention and care this troublesome complaint may be kept under, so that there are no extreme cases of feet so tender that the suffering animals kneel while eating. Such "kneelers" in a flock are a disgrace to shepherd or caretaker, and are sure signs of negligence. Any difficult cases should be kept in a paddock or other small enclosure, to admit of frequent examination and extra careful treatment. We have had cases where there was no sore visible and no discharge, yet the foot has been hot and swollen. A linseed-meal poultice is then necessary to relieve the animal and induce a discharge of pus; then a cure speedily follows. The poultice is applied in a bag, with strings to fasten it to the leg. It must be renewed daily, the leg and foot being well fomented with warm water when the poultice is taken off. It is a good plan to examine the feet of all the sheep occasionally, to cut off any hoof growth of undue length, and to remove hard pieces of dirt or stone which may get in the hoof and cause soreness.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

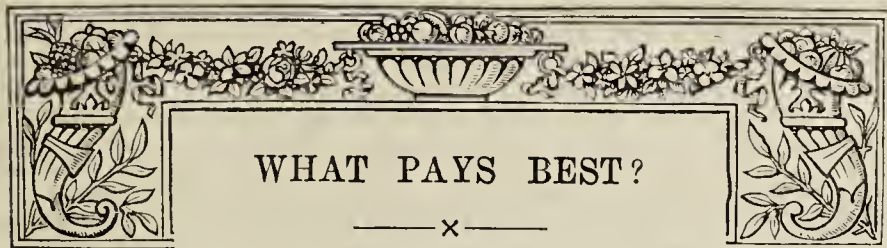
DATE.		9 A.M.					IN THE DAY.				Rain.
1893.	Junc.	Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday	.. 11	30.275	56.5	59.5	N.E.	60.7	68.9	48.2	116.9	42.3	—
Monday	.. 12	30.144	53.7	49.3	N.E.	60.1	69.9	52.0	112.1	51.1	—
Tuesday	.. 13	29.994	68.1	59.0	N.E.	60.1	78.9	51.1	123.2	46.3	—
Wednesday	14	29.867	71.9	61.6	N.E.	61.8	82.2	53.7	123.1	49.0	—
Thursday	.. 15	29.943	71.1	62.1	N.E.	62.9	84.3	59.2	124.9	51.1	—
Friday	.. 16	30.143	72.8	61.7	N.E.	64.0	88.2	54.6	128.0	48.4	—
Saturday	.. 17	30.303	76.7	63.0	E.	65.1	88.8	55.9	127.1	49.7	—
		30.096	67.3	58.2		62.1	80.2	53.5	122.2	48.3	—

## REMARKS.

- 11th.—Overcast all morning; bright sunshine all afternoon.  
 12th.—Overcast all morning; almost cloudless after 1 P.M.  
 13th.—Bright sunshine throughout.  
 14th.—Almost cloudless till 6 P.M.; a little thunder and spots of rain between 7 and 8 P.M.  
 15th.—Bright and hot, with very little cloud till 4 P.M., then cloudy till 7 P.M., but clear again after.  
 16th.—Bright and hot.  
 17th.—Hot, and almost cloudless.

An extremely dry and hot week with no measurable rain, but a few drops fell on the evening of the 14th.—G. J. SYMONS.





### WHAT PAYS BEST?

VERY few readers of this Journal are in a position to know what an extraordinary amount of glass is devoted to the cultivation of plants, flowers, fruit, and vegetables for the markets. It is not merely round London where so many fresh ventures are being started, but rather in the provinces. At present many of the provincial towns are largely supplied with early vegetables, Cucumbers, Tomatoes, choice fruit generally, and cut flowers by Covent Garden salesmen; but the latter will soon find that not a few of their best customers will be heard from less often than formerly, owing to their being able to procure much that they want locally. That the metropolis will always be better supplied with choice and, more especially, early garden produce goes without saying, for the reason that better prices are nearly always obtained for it in Covent Garden than elsewhere. The more northern growers may have reason to think differently, Liverpool, Manchester, Sheffield, and the Scotch towns—notably Edinburgh and Glasgow—all being good markets for the best of everything.

As I pointed out in a previous communication the days for fanciful prices are over, and each market grower that starts in the neighbourhood of a country town or in easy distance of several, will do well to study the wants of these rather than look much farther beyond. He can at the same time keep in touch with a Covent Garden salesman, and if at any time he has anything good to dispose of that is really needed in London let him send it quickly, or before the high prices ruling suddenly drop to figures not any better or so good as might be obtained locally without the assistance of a middleman other than a fruiterer or grocer. These remarks apply to Tomatoes in particular, as well as early fine and highly coloured Peaches and Nectarines, early Melons during such a season as we are now passing through, Muscat Grapes, and the very best Apples and Pears. Cut flowers sometimes sell well in Covent Garden; but it is not to that quarter that I advise their being largely sent other than at special times. There is nothing disheartening about the fact of London being very well supplied with much that is required of a perishable nature, and I hold that it is greatly to the advantage of the provincial towns and even villages, for many of the latter are becoming good customers to market growers, that such should be the case. The requirements of those are now studied, and this is leading to such a consumption of fruit and choice vegetables, and demand for pot plants and cut flowers, that is most encouraging. This only needs to be properly fostered to be further increased to the advantage of all concerned.

Cucumbers and Tomatoes are undoubtedly among if not the most profitable things to cultivate extensively, but ought not to be solely relied upon to make a venture remunerative. That they can be made to give good and early returns, the latter more than meeting current expenses, there is no disputing; indeed, it is possible to very profitably devote a number of houses solely to their cultivation, but all the same I think that this partakes somewhat of the character of putting all the eggs in one basket, and displays a want of resource that does not augur well for future success. The houses ought, therefore, to be so constructed as to admit of their being turned to account for the growth of either Grapes, Peaches, Nectarines, Cucumbers, Tomatoes, a variety of vegetables and pot plants. None of the houses need be large and expensive

as far as width and height are concerned, the length being optional, or anything say from 50 feet to 200 feet in length. Span-roofed houses are the most popular, and for obvious reason. If it is intended to devote one or more to Grape culture then these may well be about 24 feet wide, 12 feet high at the ridge, and  $5\frac{1}{2}$  feet high at the sides or fronts, hinged lights for the latter  $2\frac{1}{2}$  feet in depth, and the rest wall or boards being preferable to no glass at all at the sides, and only wooden shutters for ventilators. Such houses can have Tomatoes planted all over the floors during the first season, all being trained up to the roof with the aid of strings or stakes, the Vines being planted close to front. The following season the latter must be studied, Tomatoes occupying not more than two-thirds of the border, while during the third year two rows near or trained over the central path would most probably be as many of ought to be grown. In this manner Tomatoes can be made to nearly or quite pay for the cost of constructing and heating the vinery, there being no waiting for two or three seasons before anything can be made out of the speculation. In the autumn, the Tomatoes being cleared out and the Vines resting, the house can be filled with Chrysanthemums, these latter being either kept in pots (the best if most expensive plan) or prepared in the open ground and transplanted to the border. Early Potatoes and Radishes can also be had easily enough from these inside borders without greatly delaying the planting of Tomatoes and Vines.

Prices obtained for early black Grapes are scarcely remunerative, but those who wish to keep the local trade as much as possible in their own hands ought certainly to force a few black Grapes, while if they can colour Muscats fairly well by May or June they will have no difficulty in selling these to the leading fruiterers and salesmen in London and other towns at good prices. Showy late black Grapes, such as Gros Maroc, Gros Colman, and Alicantes, pay very well after October at 2s. per pound, and fine Muscats will always sell better than any other class of Grapes. Even the latter must not be cut and sent to the markets recklessly, the better plan being to let the principal salesmen know they can have superior Muscats whenever they are wanted, special orders always, as they should do, meaning the best prices. Private gardeners who send their surplus produce to market should adopt similar tactics with superior Grapes that will keep, while as regards soft or quickly perishable fruit generally, they must despatch these as soon as fit and take their chance with the rest.

Cheap and serviceable houses, or such as could first be cropped with Potatoes, salading, and Kidney Beans, and then with Tomatoes, are those about 14 feet wide, 9 feet high in the centre, and 3 feet high at the sides, the latter being boarded. If these are constructed on the ridge and furrow system in blocks of three houses two sides will be saved, but it is doubtful economy having a clear current of air right through the whole block, as there may be times when it will be desirable to keep some of the houses hotter than the others. Nor is it wise to dispense with hot-water pipes. Heating is a serious item of expenditure, but it is false economy trying to do without it even for a single season, Tomatoes growing very slowly, failing to set good crops, and are most liable to disease in unheated houses. Such structures would hold at least five rows of Tomatoes, two rows being trained up the roof and the rest either obliquely to the centre or uprightly. With a flow and return pipe on each side of the house, or, if preferred, a flow and a return down each side of a central path, and sufficient boiler power, these houses would grow winter Tomatoes well. These latter, whether grown singly in 10-inch pots or planted out, should pay well. If strong plants are ready for their fruiting quarters by the first or second week in August fairly heavy crops might be set in time to ripen in November and December, and more fruit could be set in January or early in February, this ripening in time to realise 2s. per lb. in Covent Garden.

It is not large consignments of Tomatoes that are wanted



during the winter and spring, and for this and other reasons, which were conveyed or hinted at when these remarks commenced, some of the so-called Tomato houses ought to be devoted to plant and cut-flower culture during the late autumn and winter months, if not still longer. Chrysanthemums are somewhat overdone, but that they still pay fairly well is evident from the fact that some growers annually house them by tens of thousands. What I find pay best are the Madame Desgrange family, taking care to house these before early frost injure the delicate buds; and any white and yellow varieties that are at their best late in December and during January. There is only a very limited demand for Chrysanthemums of any shade of colour during the height of the season, even specimen blooms failing to sell well last year. Those who can grow neat plants of any variety in 8-inch pots would find they sell readily enough at 9s. per dozen wholesale, and 1s. or rather more each retail, paying therefore better than cut flowers.—MARKET GROWER.

(To be continued.)

## FLOWERS AND MUSIC AT EARL'S COURT.

THE management of the Horticultural Exhibition at Earl's Court are to be congratulated on the change which they have made in the disposition of the flower tent. Last year the shows were held in the building at the extreme corner of the grounds behind the band stand allotted to the Grenadier Guards. This plan, however, did not work satisfactorily, as the counter attraction of the music seemed to intercept the public while seeking the flower show in such a secluded situation. The new flower tent is stationed midway between the two chief band stands, and fairly in view of the constant stream of visitors passing between these centres of attraction. The flower show is consequently a much greater point of interest than was the case last year. It might be suggested, however, that the music and the flowers are still more divorced than is consistent with the title of the Exhibition, and that certain other arrangements might have been sacrificed for the purpose of bringing the two into actual contact. The more they are approximated the less are they set into competition against each other. At present the flower shows indicate a tendency to suffer by the estrangement, though they are more patronised than last season. How much better and more instructive it would be if those persons who are idly promenading around the bands could listen to the music and contemplate the floral exhibition at one and the same time. The tent is a lofty and handsome one of some 120 feet in length, and lighted from above by two brilliant incandescent globes. The floor is of strongly consolidated gravel, almost as hard as concrete and most agreeable to walk upon. In an even more favourable situation and with constant inducements to exhibitors, it might become, as it ought to be, the chief feature of the Exhibition.

During the Show of last week the central stages were devoted to the exhibits of Messrs. Barr & Sons, while the whole of the outer sides of the tent were occupied with those of Mr. H. B. May. Both displays very naturally showed the effects of the great heat, and besides necessitating constant attention, were only to be seen in their perfection during the early days of the week. Prominent among the exhibits of Messrs. Barr were Irids, Lilliums, Alstroemerias, Iceland Poppies, with several varieties of *Oenothera*, and other herbaceous plants. The collection of Ferns of Mr. H. B. May, which occupied the whole of a side of the tent, was, however, the chief feature. These were most tastefully arranged, among them being a very fine specimen of *Agliomorpha Meyeriana*, and a handsome plant of *Cibotium regale*. *Nephrolepis exaltata* was also very distinguished, and here and there the curiously whorled *Platynerium*. The whole presented a most refreshing sight in the hot weather, if one disregarded the risk run by so exposing the plants.

On the other three sides stood a great variety of artistically arranged exhibits, also from the establishment of Mr. May, in which *Kentias*, *Crotons*, *Aralias*, *Cocos*, *Dracenas*, *Alocasias*, *Araucaria excelsa*, and other foliage plants formed a background, lightened by the judicious interspersions of flowering plants, such as *Lilies*, *Carnations*, *Anthuriums*, *Begonias*, and *Hydrangeas*, the whole being lightened with a liberal interposition of *Adiantums* and *Mosses*. Such standing exhibitions as this are highly to be commended, and it is to be hoped that the authorities at Earl's Court will see their way clear to repeating them frequently during the season, and so render their enterprise a true resort for the lover of plants and flowers.

## CANKER IN FRUIT TREES.

I DO not profess to know anything about the science of canker in fruit trees; but as to its being a contagious disease I think that theory is a myth. I am of the opinion that it is all a question, as "A. D." points out (page 498), of soil. I know that some varieties will not grow in certain soils, no matter what is done to them in the way of replanting. The soil appears to be deficient in some element or it has too much of another to enable the trees to mature the young growth annually.

It is the shoots of the previous year's growth that suffer during the winter and fail to grow the following spring. I have proved many times that the soil has much to do with it. I have a standard tree of Ribston Pippin that was planted fifteen years since; the stem is thicker than it was then, but the head is no larger than at planting time. It has grown and died back, repeating the process for years in spite of the number of times it has been replanted. It is strange how a certain variety will fail in one garden and be a success in another. I have noticed endless instances of this. Pott's Seedling is the latest case of canker that I have experienced. This variety does not appear to succeed with me, even when planted carefully in fresh ground. I know another garden where this is the best Apple they have for surety in crops; the tree is an aged standard. I also know that it is possible to make some sorts canker in one garden and by replanting it in soil quite different in character to renovate the same trees. If this can be done in the same garden, how can canker be other than owing to the unsuitable character of the soil for that particular variety? I have known persons attempt to cure the disease, as it was termed by them, with the aid of lime and petroleum, scraping the wounds and lifting the trees and manipulating the roots. Instead of killing the canker the tree was killed.

In the case of Pear trees, if we plant Marie Louise, Jargonelle, or Louise Bonne de Jersey in the open the wood cankers as fast as it is made, but if the same sorts are planted against a wall they bear fair crops of fruit and do not show the slightest sign of canker. This fact proves to me that the assistance of the wall enables the wood to mature and thus bear the effect of the frost better. Trees of the two first named were allowed to remain in the open, first as pyramids and afterwards as loose bushes for ten years, but not a single fruit was ever gathered from those trees, although a quantity of blossom was upon them every year. Surely this is a distinct case of maturation of the wood and not anything approaching to a contagious disease.—E. M.

[We have received several other communications on this subject, including an exhaustive article from Mr. Abbey, for which space cannot be found this week.]

## NIGHT-BLOOMING CEREUS.

I HAVE been very much interested with the notes on the Night-blooming Cereus. I have a photograph showing a plant with twenty-five blooms, not very distinct, and I have seen thirty-five and thirty-seven flowers fully expanded. Unfortunately the plant was broken at the stem during some alterations. I kept it for eighteen months without any roots by syringing and damp moss.—WM. SCALES.

I WAS pleased to see the references regarding the Night-blooming Cereus in the *Journal of Horticulture*, and I think I can fairly accurately fix the varieties we had formerly. They were three—*Cereus grandiflorus*, and I believe *C. nycticalus* and *C. Macdonaldiae*. The first named I am quite sure about, and it was a glorious flower in every way. The petals were pure white, standing very erect; the sepals, which were brown outside and bright yellow inside, thrown back almost at right angles from them, the effect of the snowy white petals, backed and surrounded by the halo of yellow, being exceedingly striking. Added to all this, the flower had a most powerful perfume of vanilla, which scented the whole house, and combined with the other qualities already mentioned to make it, I think I may say without any hesitation, the most attractive flower in the whole of my father's collection.

I am practically certain that the second plant I have mentioned was *C. nycticalus*, as what I remember of it tallies exactly with the description and illustration of that variety given in the first volume of the "Dictionary of Gardening," page 298. It was a larger flower than *grandiflorus*, but not so striking when compared with the latter, as the sepals were of a much paler yellow, the contrast with the petals, therefore, not being so great, and it entirely lacked the delicious perfume, but seen alone it seemed perfect, the great size being very impressive.

The third species I do not remember to have seen in flower, as I believe it was a plant of this one that was lost a number of years ago through frost getting into the house owing to something going wrong with the hot-water pipes one night, a loss which was a constant source of regret to my father, as it was getting a fine plant, and he had only one or two small cuttings left. I see from the Dictionary already referred to the description is as follows:—"Sepals bright red and orange, radiating and very numerous, petals delicate white."

The habits of the two first-named plants were much the same, as far as I know. Sometimes in dull weather it appeared uncertain for two or three mornings whether the flower would open the same night; but if, on the other hand, it was bright and sunny, although in the morning it seemed quite unlikely, yet in the evening it would expand contrary to expectation. From this it may be judged how rapid the final expansion was, as an artist friend found to his dismay when he started to sketch it early in the evening, as before he was able to outline the whole the appearance had entirely changed. As far as I remember



the buds would not be at all open till between 6 and 7 P.M., and about eleven or twelve o'clock (rather later perhaps than earlier) they would be fully expanded. Certainly as late as seven the next morning I have seen them not quite closed, but soon after that they would be hanging down, looking most disconsolate.

I am sorry I cannot give you any fuller or more reliable information, as I should much like to, seeing they were such favourite plants of my father's. I may add that we seldom had more than one, and I think never more than two out on the same plants at one time, and I should say a dozen during the season would be quite an outside number.

I enclose two photographs, the particulars pencilled on the back, but am uncertain of the facts as regards the one I believe to be *grandiflorus*. My sisters tell me that when in North Wales some five or six years ago, they went over a gentleman's garden with my father, which was quite a show place near Penmaenmawr, and there they saw a large *Cereus* which had from twenty to thirty buds on it; but alas! as to variety they cannot speak. All they know is it was a night-bloomer.—MARK B. F. MAJOR, *Cromwell House, Croydon*.

[The photographs depicted the blooms well, but were scarcely suitable for reproduction.]

### GLASS COPINGS AND PEACH FAILURES.

WHILE not wishing to say one word against glass copings for walls, I think very good crops of most kinds of fruit can be obtained without them in the south of England. I am acquainted with a garden where Cherries fail on the walls, owing it is said to the presence of fixed glass coping keeping rain from the leaves. Our trees on a west wall seldom fail to bear abundantly, and they are neither protected with glass copings or anything else. Peaches and Nectarines I regard as the most certain outdoor fruit. Speaking generally, the principal cause of failure to obtain full crops of Peaches annually is owing to a want of maturity of the growth. Whether the trees are under the protection of glass copings, or in the open against the wall, the result is the same. All the useless growth should be cut out directly the fruit is gathered, also keep the trees sufficiently thin all the summer. Why the pruning is deferred until the spring I never can understand.

In some cases the cause of failure is in feeding the trees too liberally with stimulants. Peach trees require but little of this, except where the fruit crop is a heavy one and the growth weak. Where the roots are low in the border, too far from the warming influence of the sun upon the surface, the wood cannot mature in such a manner as to give satisfactory results. Peach trees prefer a firm surface soil; even if it were not interfered with for ten years by digging amongst the roots, it would be all the better if the roots were in the position they ought to be—close to the surface. Where vegetables are cultivated over the roots of the trees the crop of Peaches will be thin, adding manure to the soil and disturbing the roots being conducive to gross growth, which Peach cultivators do not like to see.

Another cause of failure is in some instances, especially where the soil is light, due to want of sufficient moisture at the roots all through the summer and autumn. When a crop of fruit is gathered the careless cultivator is apt to forget the trees for some months in the matter of supplying the roots with water. The fruit is gone and the trees have completed their season's growth, and what more beside maturity can the trees require? This latter, it is often thought, needs assistance, though, to acquire the right kind of matured growth. In light soil during hot weather it is much easier to give trees too little water than too much in the autumn.—HANTS.



CYPRIPEDIUM × CHARLES RICHMAN.

THE illustration (fig. 92) represents a bloom of this fine hybrid *Cypripedium*, which is the result of a cross between *C. bellatulum* and *C. barbatum*. A plant of it was shown at the Drill Hall on May 9th by Mr. C. Richman, Springfield, Trowbridge, when an award of merit was adjudged for it by the Orchid Committee of the Royal Horticultural Society. The dorsal sepal is whitish, veined with deep rosy purplish shade. The petals are broad, similarly coloured, and covered with minute dark spots. The lip is a dark purplish brown.

#### ORCHIS MACULATA SUPERBA.

ON a recent visit to the gardens at Kirkconnell House, Dumfries, N.B., the residence of Mrs. Maxwell-Witham, I saw a fine clump of this plant, which is rarely seen in good condition in gardens. I sent a spike to the Editor, who will, I think, agree that it was really beautiful, and, considering the season and the character of the soil, of exceptional merit. The ordinary *O. maculata* is very pretty, but this form is superior, the spike being much longer, the flowers more numerous and densely packed together, while they are also of a fine purple colour.

This large variety appears to be difficult of cultivation, and Mr. John Harper, the gardener at Kirkconnell, has courteously favoured me with some particulars regarding it. The original plant from which that under notice was taken was found near Rowallan Castle in Ayrshire, and has been under cultivation for eighteen years. That at Kirkconnell was brought by Mr. Harper on entering on his present appointment about four years ago. This variety of *O. maculata* appears to have been frequently found on Kenwick Moor in Ayrshire, and has occasionally been named



FIG. 92.—CYPRIPEDIUM × CHARLES RICHMAN.

*O. Kenwicki*, another name being *O. maculata* "Kilmarnock variety," it having been put into trade by a Kilmarnock firm. Mr. Harper has grown it in stiff clay, with the flowering part of the spike no less than 13 inches in length; but the plant at Kirkconnell is at present in a dryish border of alluvial soil, impoverished by the addition of ashes in order to make it more suitable for some rather tender plants for which it was originally intended. The spikes were thus shorter than the length mentioned above, but they were of sufficient size to form an object of great beauty.

*O. maculata superba* has been found to be short-lived in some gardens; but Mr. Harper's experience would show that in cultivation it may attain a long life. In my garden I have had for over three years a variety of *O. maculata* under the same name, but not so fine as that at Kirkconnell, and this appears to require occasional removal to fresh soil and copious supplies of water while making growth. This year it is much inferior. *O. maculata* varies much in a wild state, and Mons. H. Correvon, in his new work, "*Les Orchidées Rustiques*" (Geneva, 1893), names the following varieties:—*Recurva*, *Bonanniana*, *longibracteata*, *macedonica*, *macrostachys*, *Meyeri*, *sudetica*, and *lusitanica*. *O. lapponica* is said to be a northern form of *O. maculata*.—S. ARNOTT.

[The spike received from our correspondent was very fine indeed. The flowered portion measured 7 inches in length, and was 5½ inches in circumference.]

### ROYAL HORTICULTURAL SOCIETY.

JUNE 20TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair), Mr. Morris, Mr. McLachlan, Dr. Müller, Prof. Oliver, Dr. Bonavia, and Rev. G. Henslow, Hon. Secretary.

*Scale on "Retama."*—Mr. Morris observed with reference to this subject brought before the last meeting, that the name of the *Retama* is *Cytisus nubigenus*. It is the only ligneous plant growing on a platform at an elevation of 8000 feet on the Peak of Teneriffe. The whole of the plants were covered with the scale. Dr. Perez had noticed no instance of this scale insect appearing until Australian trees had been introduced into Teneriffe. Mr. Morris added that it has now appeared at Kew on the English Broom.

*Honeydew on Limes.*—Mr. Morris remarked that this had been so abundant on the Limes at Kew that the cement pavement below them had become quite slippery from the drip from the trees. Mr. Henslow added that he remembered a similar occurrence from an Ash tree in a garden in Regent's Park Road about the year 1878.

*Oranges in Devon.*—Mr. Morris exhibited photographs of Orange trees growing and fruiting successfully in arched recesses at Coombe Royal,



near Kingsbridge, Devon. They were protected in front during the winter.

*Cochineal in Teneriffe.*—Mr. McLachlan raised the question of the cultivation of this insect in Teneriffe, as the industry appears to have decayed in consequence of the introduction of aniline dyes. Mr. Morris observed that it was somewhat reviving, as there was a certain demand for colouring fruit, preserves, &c. Dr. Müller added that it would be always required as a source of carmine, as this colour cannot be replaced by any other known product.

*Thereva nobilitata in Celery.*—Dr. Müller exhibited grubs resembling wireworms, which were found in decayed Celery plants. They proved to be those of a brown fly. This usually lives in rotten wood, but whether the grubs destroyed the Celery or were feeding on the decayed roots, &c., was not clear. It was suggested that possibly they were carnivorous, as other grubs had disappeared from the soil.

*Calochortus and Lily, Monstrous.*—Dr. Bonavia exhibited flowers, each consisting of two flowers united on one floral receptacle. An examination of the fibro-vascular cords showed that these had arisen by chorisis from a normal stem. *A propos* of this, Mr. Henslow said that he had examined the cords in a germinating Cockscomb, and found that the multiplication of the bracts and flower buds arose in a similar way. The zone of cords being circular in section below, the cords rapidly increased in number by bifurcation above, one branch entering each bract and a small cluster each flower bud. Hence fasciation would be better described as the effect of cauline chorisis, and not as a fusion of a number of independent buds, as the term seems to imply.

*Azolla pinnata Fruiting.*—Mr. Greenwood Pim sent specimens in fruit. He writes—"The plants had been growing in the open air for two years in Co. Wicklow, and had increased to a large extent. Two or three months ago a quantity was placed in a shallow peaty pool, which is now almost dry, having only a few inches of water. In this the plant is producing fruit on almost every fully developed individual."

*Linaria repens* × *vulgaris*.—Mr. Henslow showed specimens of this hybrid which has occurred spontaneously near the station at Oxford, with the following remarks received:—"L. repens was not known prior to 1889, when ballast was brought from Didcot. It appeared in 1890 side by side with L. vulgaris. In 1892 a complete chain of hybrids was found from L. repens, with a little yellow on the lip, to L. vulgaris, with the faintest striæ on the flower."

#### EXAMINATIONS IN HORTICULTURE, 1893.

THE following class list of the Royal Horticultural Society's examination in horticulture has been sent us for publication. There were seventy-six candidates in the higher grade, and 128 in the lower grade:—

##### HIGHER GRADE, SEVENTY-SIX CANDIDATES.

FIRST CLASS (OVER 200 MARKS).—F. V. Dutton, 235; W. Busby, 205; John Lewis, 205; H. Nickolls, 200; A. E. Smith, 200; J. D. S. Dowse, 200.

SECOND CLASS (BETWEEN 200 AND 150 MARKS).—E. G. Gilmore, 190; A. J. Manning, 185; Geo. Witts, 180; S. Morrill, 175; H. Ames, 175; A. N. Pierce, 170; J. T. Emmott, 170; G. Butcher, 170; G. A. Bishop, 170; Winifred Blake, 165; W. J. Stokes, 165; William West, 165; C. J. Dicken, 165; Jno. Barrett, 160; M. Byrne, 160; H. Fincham, 160; J. H. Rewcastle, 150; S. C. Meire, 150; E. Caesar, 150; E. Farris, 150.

THIRD CLASS (BETWEEN 150 AND 100 MARKS).—G. F. Finley, 145; C. F. F. Hutchings, 145; F. Gudgin, 145; A. Ashdown, 145; J. Tufna'il, 140; R. J. Tabor, 140; J. H. Morton, 140; A. J. Bridges, 140; J. H. Parkin, 135; R. C. Gant, 135; W. T. Wagstaff, 130; F. W. Humphreys, 130; J. Morrison, 130; D. Somerville, 125; A. G. Rule, 125; A. C. Bailey, 125; T. A. Young, 120; Geo. Beech, 120; E. J. Eggleton, 120; S. E. Yetman, 115; W. Pascoe, 115; W. F. Gullick, 115; E. Waller, 115; H. F. Tagg, 110; W. N. Sands, 110; Hy. Overly, 110; Lilian E. Clarke, 110; Alfred Catt, 110; W. Chamberlain, 110; Ar. E. Philbrick, 105; W. Milne, 105; E. J. Elliott, 105; A. G. Dangerfield, 105; J. Carter, 105; G. R. Saunders, 100; W. Douglas, 100.

##### LOWER GRADE, 128 CANDIDATES.

FIRST CLASS (OVER 200 MARKS).—H. S. Daine, 240; W. R. Goff, 225; J. J. Miles, 225; George Lamb, 220; W. Stroud, 205; G. R. Waterson, 200.

SECOND CLASS (BETWEEN 200 AND 150 MARKS).—W. E. Watkins, 195; E. J. Woodard, 190; A. H. Dudley, 190; C. Pine, 190; G. J. Berry, 185; Edward Chopping, 180; M. T. O'Connell, 175; George Wall, 170; Alfred D. Morris, 155; D. Clague, 155; F. G. Drew, 155; C. Barnett, 155; A. D. Hogg, 155; C. W. Avins, 155; J. R. Ismay, 150; H. P. Bridges, 150.

THIRD CLASS (BETWEEN 150 AND 100 MARKS).—C. Weston, 145; A. Melville, 140; W. S. Walker, 140; Frances E. Oldham, 135; F. A. Littlejohn, 135; G. A. Murrell, 135; A. C. Bartlett, 135; T. F. Badcock, 130; J. Newman, 130; Jas. Simpson, 130; P. J. Gray, 125; Frances Mil. Cooper, 125; J. Blomfield, 120; Jas. Davis, 120; W. Farr, 120; G. Beale, 120; Gert. Gaskell, 120; G. M. Stuart, 120; Frank Allen, 115; Annie G. Stephens, 115; J. H. Aitken, 115; J. A. Matthews, 115; W. McCreath, 115; F. N. Woodward, 115; J. F. Dancer, 110; Edmund Fry, 110; T. Gardner, 110; Hy. Bates, 105; W. E. Loe, 105; A. Crossley, 105; A. Blake, 105; W. Burgess, 105; W. Bygraves, 100; W. J. Woolley, 100; Arthur Osborn, 100; G. Hinton, 100; Gilbert Hart, 100; G. T. Bridges, 100.—MAXWELL T. MASTERS, JAMES DOUGLAS, *Examiners*; W. WILKS, *Sec. R.H.S.*



OUR INDEX.—We publish this week an index to the matter that has appeared in the *Journal of Horticulture* during the past six months. Owing to this and the extreme pressure on our space consequent on the reports of Rose shows, we are compelled to withhold many interesting articles and letters till our next issue. We thank our correspondents, and assure them that prompt publication or otherwise in no sense indicates the appreciation of their communications.

— EVENTS OF THE WEEK.—Rose shows are now the order of the day. As notified in the list published elsewhere, Eltham, Sittingbourne, and Windsor Shows are held to-day (Thursday), and on Saturday, July 1st, the Metropolitan Exhibition of the National Rose Society will take place at the Crystal Palace. On Tuesday, July 4th, shows will be held at Bagshot, Diss, and Gloucester, and on Wednesday, July 5th, at Croydon, Ealing, Farnham, Hereford, and Lee, the latter continuing the following day. A Floral Fête will be held from 8 P.M. to 12 P.M. in the Gardens of the Royal Botanic Society, Regent's Park, on the 5th inst. On July 6th exhibitions are to take place at Bath, Farnham, Manchester, and Norwich.

— THE WEATHER IN LONDON.—After a prolonged period of drought rain has fallen to an appreciative extent. Occasional showers occurred on Saturday, rain falling heavily during the night. Sunday was fine, but Monday opened showery, though it cleared before the day was far advanced. Tuesday was dull with rain in the afternoon, and on Wednesday morning it was showery.

— WEATHER IN THE NORTH.—Since the afternoon of Thursday last several heavy showers of rain have fallen, and the temperature has been considerably lower. In some districts more rain has fallen than in this. Monday was fine, especially in the afternoon and evening. During the night a great deal of rain fell, and this morning (27th) is very wet, with every appearance of a rainy day.—B. D., *S. Perthshire*.

— LECTURES ON ARBORICULTURE.—A series of lectures on arboriculture was commenced by Professor Curtis at the Garden and Forestry Exhibition, Earl's Court, on the 17th inst. The lecturer in the course of other remarks, referred to a specimen of the Douglas Fir (*Abies Douglasi*) from Lord Carnarvon's Highclere estate in Hants, and dwelt on the large amount of timber produced by that tree in a given time, much greater than by any other. Regarding the origin of the Larch disease, which he showed on a Larch exhibited, Professor Curtis considered that the disease is due to the fungus (*Peziza Wilcomi*) penetrating the Larch wherever it is injured, either by the fall of a branch or by the teeth of rodents, and it causes an exudation of turpentine and an injury to the wood substance, ultimately destroying the tree.

— WASPS' NESTS.—Mr. E. Molyneux, Swanmore Park, writes:—"The long-continued spell of hot and dry weather is multiplying the wasps. On Friday last within a quarter of a mile of the garden thirty were destroyed. By employing cyanide of potassium little trouble need be encountered in the taking of the nests as compared to the use of the old-fashioned squib made of gunpowder and sulphur. By dropping half a teaspoonful of cyanide into the mouth of the entrance hole at any time during the day nothing more is needed. The incoming wasps quickly feel its effects, while those already in the nest cannot get out, the fumes of the potassium at once suffocate them. Seventy wasps' nests have been taken within 600 yards of this garden."

— FINE ANTIRRHINUMS.—I send you a few Antirrhinum spikes for your opinion. I grow a large number of them, and for a grand display at this time of the year I think they cannot be excelled. There are many colours, selfs and stripes, but I prefer the latter. The spikes sent are from cuttings inserted last autumn. I also grow many seedlings and select the best. The seedlings generally have the largest spikes, and they flower after the others are over. They have been better in previous years, but that is accounted for by the very dry weather that we have had, and they have not had any attention in the way of watering since they were planted. These Antirrhinums are so easily grown, and the wonder is that they are not oftener seen.—JOHN HARPER, *Kirkconnell, Dumfries*. [The spikes were very fine, nearly 18 inches in length, and carrying upwards of fifty expanded flowers.]



— **THE EASINGWOLD EXHIBITION.**—The Easingwold Floral, Horticultural, and Industrial Society's Exhibition will be held on August 30th, and not on August 23rd, as was at first advertised.

— **MONS. ERNEST BERGMANN.**—We are informed that Mons. Ernest Bergmann, the Secretary of the National Horticultural Society of France, has received from His Majesty the King of Portugal the Knight's Cross of the Order of Christ.

— **THE WORSHIPFUL COMPANY OF GARDENERS,** of which the Rev. W. Wilks, M.A., the popular Secretary of the Royal Horticultural Society, is Master, will hold a dinner at 6.30 P.M., at the Whitehall Rooms, Hotel Métropole, on July 12th, 1893.

— **EXHIBITION AT LYONS.**—It is reported that on Sept. 14th and four following days the Association Horticole Lyonnaise proposes to hold on the Cours du Midi, Perrache, an Exhibition of horticulture, viticulture, and objects of art and industry connected with them.

— **THE LIVERPOOL HORTICULTURAL ASSOCIATION.**—We are informed that the fourteenth summer Flower Show of this Association will be held on the Review Ground, Sefton Park, Liverpool, on July 26th and 27th. The Chrysanthemum and Fruit Exhibition will take place on November 15th and 16th.

— **NEWCASTLE SUMMER SHOW.**—The Newcastle Summer Flower Show will be held on July 20th, 21st, and 22nd, in conjunction with the great Exhibition of the Northumberland Agricultural Society. The Society is at present in a flourishing condition, and with the other attractions we have no doubt the Show will be a success. Particulars are given in our advertisement columns.

— **WEATHER AT LIVERPOOL.**—After weeks of drought and intense heat, which seriously affected vegetables, flowers, and fruit, and left lawns in a brown state, the weather reached the climax on Saturday and Sunday, the 17th and 18th, when the thermometer stood on those days over 90° in the shade. Monday, Tuesday, and Wednesday there was a perceptible cooling down in the atmosphere, denoting that rain could not long be delayed. About 4.30 P.M. on Thursday the long-looked for rain descended in copious showers, and they continued more or less till the end of the week. What a different aspect the garden now wears! It is to be hoped now that the rain has come that we may have sufficient to bring on all vegetables without having to resort to the tedious, but what has been absolutely necessary where water was at command, labour of watering outdoor crops.—R. P. R.

— **INDEX KEWENSIS.**—This, which has been in the course of preparation for several years past, is "a work of supreme importance to students of botany and to horticulturists," and we think the following prospectus will interest readers:—"Now ready, part 1, pp. 728, quarto. Price to subscribers, 2 guineas net. The work will be completed in four parts, which will be issued to subscribers at 8 guineas, and the price will be raised on publication. 'INDEX KEWENSIS.'—PLANTARUM PHANEROGAMARUM NOMINA ET SYNONYMA OMNIUM GENERUM ET SPECIERUM A LINNAEO USQUE AD ANNUM M DCCC LXXXV COMPLECTENS NOMINE RECEPTO AUCTORE PATRIA UNICUIQUE PLANTAE SUBJECTIS. SUMPTIBUS CAROLI ROBERTI DARWIN. DUCTU ET CONSILIO, JOSEPHI D. HOOKER. CONFECIT B. D. JACKSON.

"The printing of part 2 is well advanced, and the completion of the whole work may be expected during 1894. The following communication from Sir Joseph Hooker, F.R.S., &c., explains the origin, plan, and purpose of this important and comprehensive undertaking:—"Shortly before his death, Mr. Darwin informed me of his intention to devote a considerable sum in aid or furtherance of some work of utility to biological science, and to provide for its completion should this not be accomplished during his lifetime. He further informed me that the difficulties he had experienced in accurately designating the many plants which he had studied, and ascertaining their native countries, had suggested to him the compilation of an index to the names and authorities of all known flowering plants and their countries, as a work of supreme importance to students of systematic and geographical botany, and to horticulturists, and as a fitting object of the fulfilment of his intentions. I have only to add that, at his request, I undertook to direct and supervise such a work; and that it is being carried out at the Herbarium of the Royal Gardens, Kew, with the aid of the staff of that establishment.—JOS. D. HOOKER." As a reference work regarding the nomenclature of plants, "Index Kewensis" will stand pre-eminent. Mr. Henry Froude, Oxford University Press Warehouse, Amen Corner, London, E.C., is the publisher.

— **MESSRS. SUTTON & SONS,** Reading, have announced to their employes that in commemoration of the Royal Wedding all departments in their business will be closed on July 6th. In addition to receiving the usual day's pay, every employe will, on the preceding day, be presented with an extra week's wages.

— **ROYAL WEDDING BOUQUETS.**—We are informed Messrs. Wills & Segar have received the Royal command to supply the wedding bouquets on the occasion of the marriage of H.R.H. the Duke of York and H.S.H. the Princess Mary of Teck. The same firm have also received instructions to decorate the Royal breakfast table at Buckingham Palace on the occasion of the Royal Wedding.

— **NATIONAL PINK SOCIETY (NORTHERN SECTION).**—This Society will hold its annual Exhibition, July 6th, in the gardens of the Manchester Royal Botanical and Horticultural Society, at Old Trafford, in conjunction with the exhibition of Roses to be held in the gardens on that date. Mr. J. W. Bentley, Stakehill, near Manchester, is the Secretary.

— **AN ECCENTRIC CURRANT BUSH.**—I have a large Red Currant bush full of fruit, and on one of the branches of which is a crop of fine White Currants. This branch of white fruit does not start from the ground, is not grafted, and is a collateral of one of the branches bearing the red fruit, so that the two kinds are really on the same branch. I should be glad to know if any of your correspondents have met with a similar curiosity.—CHAS. H. PAGE.

— **THE GREAT YORK GALA AND HORTICULTURAL EXHIBITION.**—We mentioned in our report of this Exhibition, held on the 14th, 15th, and 16th inst., that Messrs. Jas. Backhouse & Son, The Nurseries, York, had arranged an artistic Alpine garden at one end of a great tent, and the Judges recommended that a gold medal should be awarded to this excellent exhibit. We are pleased to say that the Committee decided to do this, and the recognition was well merited.

— **NOTTS HORTICULTURAL AND BOTANICAL SOCIETY'S EXCURSION TO SHIPLEY HALL GARDENS.**—The first excursion of the season of the above Society took place on June 15th. Shipley Hall, Derbyshire, the residence of Mr. E. M. Mundy, J.P., was the place decided upon, thanks to Mr. Elphinstone's kindness, and no more interesting place could there be for such an object. The weather was perfect from a holiday point of view, and some 200 gardeners and garden lovers responded to the Society's invitation. On arriving at Shipley the excursionists received from Mr. Elphinstone a hearty welcome, and the family being away from home he and his staff were enabled to show the visitors unreservedly not only over the whole gardens, but over farm and farmyard, dairy (a model in its way), park—everywhere. It was that unlimited freedom of observation and indulgent rest amongst such scenes of beauty which was the chief item in the enjoyment of the day. Tea was provided in a tent in the park, and at its close the President of the Society, the Sheriff of Nottingham (Mr. Joseph Bright) in thanking Mr. Mundy for the use of his grounds, and Mr. Elphinstone for his courteous reception, alluded to all their natural advantages, and dwelt on the excellent gardening which was shown in every part of the gardens, more especially so in the singular beauty of the indoor fernery and the magnificent Orchids.

— **LEICESTER AND MIDLAND CHRYSANTHEMUM SOCIETY.**—On Saturday, June 24th, the first (what is hoped will be annual) outing of the above Society took place under favourable circumstances. At the invitation of Thomas Brooks, Esq., the gardens of Barkby Hall were visited. Early in the day the weather seemed rather threatening, but midday it had cleared, and the bursts of sunshine added much to the prospect of a pleasant journey. About two o'clock the party left Leicester in a covered conveyance, and passed through Belgrave, Thurmaston, and Syston, where a halt was made to inspect the nurseries of Mr. W. K. Woodcock, who has done sterling service to the Society, he having been Chairman of Committee for several years, and much regret was expressed when the resignation of that office was caused by his lecturing appointments. Another pleasant drive of about a mile brought us to Barkby Hall, where Mr. Lansdell, the head gardener, was expecting us. At six o'clock the company adjourned to the Malt Shovel Hotel, where an excellent meat tea had been prepared. After tea Mr. H. Bell (the Chairman of Committee) was voted to the chair, and a discussion on Tomato growing was introduced by the Chairman, and carried on by Messrs. Lansdell, Smith, W. Bell, Johnson, and others. At nine o'clock the party started on the return journey, reaching Leicester about 10 P.M.



— CAMPANULA (PLATYCODON) GRANDIFLORA.—I saw this very fine yet not at all common Bellflower in Mr. Ladham's nursery flowering grandly in spite of the drought. The flowers are erect, of a pale mauve colour, and very pleasing. It is very hardy, and worthy of a place in every hardy flower border.—D.

— A WILD FLOWER EXHIBITION.—There was a large and comprehensive display of wild flowers at the meeting of the Wakefield Paxton Society last week, over 200 species being staged. Mr. Blackburn arranged the wild flowers most effectively. A very interesting discussion was opened by Messrs. Burton and Parkin, each of whom dilated upon the usefulness and interest attached to the study of botany.

— THE WEATHER AROUND WARWICK.—Several showers have again fallen in this district, which have already produced a marvellous improvement in the appearance of vegetation generally. Trees, grass, and crops are in many instances assuming numerous and varied tints of verdant green. This change in the weather is fully appreciated after the intense heat and arid atmosphere experienced during the previous week. Rain began to fall during the evening of Thursday, 22nd, and continued at intervals throughout the night; by the following morning a quarter of an inch had fallen. On Friday slight showers fell frequently, and continued to fall during the night. To-day (Saturday) they are of frequent occurrence, and seem likely to continue. The total rainfall during the last three days amounts to a little less than an inch.—H. DUNKIN.

#### THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—ANNUAL DINNER.

THE supporters of this old established and excellent charitable Institution held their fifty-fourth anniversary festival dinner at the Whitehall rooms, Hôtel Métropole, on Thursday, June 23rd. Baron Schröder, who is well known in the gardening world as an enthusiastic orchidist and an ardent supporter of all horticultural matters, presided over a large assembly. About 120 gentlemen were present, and the company included Lord Teynham, Sir Trevor Lawrence, Bart., N. N. Sherwood, Esq., Rev. W. Wilks, M.A. (Master of the Gardeners' Company), P. Crowley, Esq., H. J. Veitch, Esq., N. L. Cohen, Esq., John Lee, Esq., R. M. Hogg, Esq., T. F. Peacock, Esq. (Hon. Solicitor), Messrs. W. Bull, J. Laing, H. Williams, J. Cheal, H. B. May, Owen Thomas, G. Munro, A. Turner, A. W. G. Weeks, G. Paul, H. Ballantine, A. Moss, Drewett, Rivers, A. Baker, A. F. Barron, J. Walker, J. Douglas, J. Hudson, G. J. Ingram (Secretary), and many other horticulturists and their friends.

The Chairman, after the customary loyal toasts, proposed the toast of the evening—namely, that of "Continued Success and Prosperity to the Gardeners' Royal Benevolent Institution, coupled with the name of H. J. Veitch, Esq., Treasurer." In his introductory remarks, the Chairman remarked that when he was asked to preside on this occasion he was at first inclined to refuse the honour put upon him because he felt he was no orator. However, he was deeply interested in the Institution and determined to give his testimony on its behalf. He took a great interest in all things connected with horticulture, and he was sure his hearers would forgive any shortcomings on his part that evening. Despite the number of hospitals in that vast metropolis, and charitable societies innumerable, there were none that spoke so much to the heart as the Gardeners' Royal Benevolent Institution (hear, hear). The man did not exist who was not fond of flowers. They were mankind's companions alike in joy and sorrow. The associations of flowers went with them through all the circumstances of life. As children they were taught the love of flowers; young men when they go into society must have their flowers as buttonhole bouquets; and the young maiden, before she has discovered diamonds, is charmed with beautiful flowers. At matrimonial ceremonies, too, flowers were always in evidence. The happy home is usually bedecked with floral gems, and when at his (the speaker's) age, there was nothing so soothing as to go into the greenhouse and see the beautiful plants (cheers). He might go further, and say that flowers followed mankind to the grave, and he considered them as our best friends. If this was their regard for flowers, what ought to be their feelings to those who tended their flowers with loving hands night and day at the risk of their health—their gardeners? Ought they not to honour these men? Ought they not to do everything in their power to assist them in their old age, and to alleviate their sufferings? Therefore those present ought to be thankful that the Gardeners' Royal Benevolent Institution gave them the opportunity of showing their gratitude to those who had grown their fruits and flowers. The Institution, as they all knew, was established in 1838, and two years afterwards he understood there were two pensioners and 100 subscribers. At the present day there were 150 pensioners and 1300 subscribers. The Institution numbered amongst its distinguished patronesses and patrons Her Most Gracious Majesty the Queen and the Prince of Wales. The late Prince Consort had been for a long time a patron of the Institution. In his opinion he thought it was the duty of that assembly to show to the world that they were not only horticulturists, but also philanthropists; and that they were anxious

not only to grow the finest flowers that were to be found in the world, but that they could show at the same time they appreciated the labours of their gardeners (hear, hear). One noticeable feature of the Institution was the encouragement it gave to those gardeners who in their days of prosperity subscribed to its funds. He thought that the new Rule 10 was one of the best rules that he had ever seen in any charitable institution. This rule, which was incorporated last year, gave a gardener who had been a subscriber four years no less than fifty votes at an election, while subscribers over a longer period had still greater privileges. In conclusion, the Chairman made an eloquent appeal on behalf of the recipients of the pensions provided by the Institution, and he trusted that the results of that evening's proceedings would be a considerable augmentation to the subscription list (applause).

Mr. H. J. Veitch, in responding, observed that he had seldom listened to a more sympathetic speech with regard to the Institution's work at its festival anniversary. (Hear, hear). In looking back over the affairs of the Institution since it was founded, he thought its friends had great cause for congratulation that during the whole fifty-five years they could point to a continued progress, and even in these days of hard times he was still glad to say that the Institution fully maintained its position so far as the keeping up of the number of its pensioners was concerned. Although he could not point to any increase in the subscription list during the past year, still a gratifying reduction had been made in the working expenses. When he reminded those around him that Mr. John Lee, the father of the Institution, seldom failed to preside over its meetings, they might rest assured that every economy would be practised in its management. (Hear, hear). They owed a debt of gratitude to Mr. Peacock, their honorary solicitor, who so unstintingly gave his ability in framing the present rules of the Institution. He claimed that the rules of the Gardeners' Royal Benevolent Institution were now second to none. The pension list of the Society required the expenditure of the sum of £2700 annually. The fixed income was, however, only about £2000, so that the absolute need and great necessity of a spirited response to the Chairman's appeal would be manifest. He might lay stress on the fact that the pensioners of the Institution were scattered throughout the United Kingdom without regard to nationality or creed, some being in Scotland, Ireland, and Wales, as well as in England. The general rules provided that pensioners should not be eligible for election under sixty years of age, but they had the power to make exception to this. There were now four such cases, and of these one poor gardener was blind, and another suffering from brain disease. He had received many letters appealing for help, and it was sad to think that there were twenty-five unsuccessful candidates at the last election of pensioners. He asked for means to aid the needy, and then the benevolent would know that they were doing good. (Cheers).

Sir Trevor Lawrence, Bart., in response to the toast of "The Royal Horticultural, Royal Botanic, and Kindred Societies of the United Kingdom," which was briefly submitted by Mr. Moss, in the unavoidable absence of Dr. M. T. Masters, F.R.S., said that he had been connected with the Royal Horticultural Society for a long time. The Society had seen dark days, but he was thankful to say that it had emerged from them. There were now about 3000 Fellows, and they were apparently well satisfied with what they were receiving in exchange for their subscriptions. Moreover, recruits were coming in from all over the country, and no less than 274 new Fellows have already been elected this year. The Exhibition in the Inner Temple Gardens was a success from every point of view. It was a success naturally, and a most distinguished horticultural success, and many friends had told him that a more beautiful show they had never seen. He and others present had seen a good show at Ghent, and they wished an opportunity would arise to enable them to reciprocate the kind feeling that had been accorded to them there. Horticulture in Belgium was, however, on a different footing to what it was in England. Here horticulturists get "a cold shoulder" from every department of the state. (No, no). Someone said "no, no," but he maintained that he was right. However, the Royal Horticultural Society did all that was possible in disseminating a knowledge of horticulture, as in addition to the volumes now published regularly at intervals, there was the report of the Conifer Conference—a book of 600 pages—which he regarded as one of the best of works on the subject. Examinations in horticulture for garden scholarships had been held, and this year there were 204 candidates, seventy-six of the higher grade, and 128 of the lower grade. They would be glad to hear that that afternoon he had received an intimation that the Somerset County Council would be happy to co-operate with them in regard to these and similar examinations. (Hear, hear). He thought it was very gratifying to know that nearly every new plant made its *début* at one of the fortnightly meetings of the Royal Horticultural Society, which proves that the Society was in every way connected with horticulture. He expressed regret at the unfortunate results of the efforts to establish an Horticultural Hall, but he did not despair in that respect. Regarding the claims of the Institution he remarked that the debt of gratitude employers owe their gardeners is enormous, and he hoped his hearers would respond liberally to the Chairman's eloquent appeal. (Cheers).

The Rev. W. Wilks, M.A., proposed "The Stewards and Officers, coupled with name of N. N. Sherwood, Esq.," and in doing so remarked he was sure they would forgive him if he began at the bottom. They all knew what an excellent Secretary they had in Mr. Ingram. The Stewards he considered as kind friends of the Institution, inasmuch as they all worked very hard at their task. As proof of this he might mention that one of them, Mr. Munro, had collected nearly £100, and others had made strenuous efforts to augment the subscription list. Mr. Veitch,



too, was well known for his generosity, and Mr. Sherwood's name was a household word among gardeners throughout England. Mr. Sherwood was always to the fore ready to help with his head and his purse. (Cheers).

Mr. Sherwood, in responding, said he could endorse what Mr. Wilks had spoken with regard to their Secretary. It would have been a very difficult matter to have found another gentleman more fitted for the post than Mr. Ingram. (Hear, hear). It must give them all great pleasure to see Mr. John Lee there that evening. So long as he personally was prosperous he would be always endeavouring to aid this most excellent Institution. (Applause).

Mr. A. W. G. Weeks, in submitting "Our Chairman," observed that they were deeply indebted to Baron Schröder for coming there that evening. For his munificence in the past the Chairman was well known among horticulturists, and as regards his admiration for flowers, they had ample evidence of this in that earthly paradise The Dell, where many beautiful Orchids were to be seen. Baron Schröder briefly responded, amidst much cheering.

Mr. G. J. Ingram, the Secretary, announced the total of the evening's donations as £1454. The subscriptions included Baron Schröder, 50 guineas; Baroness Schröder, 50 guineas; Messrs. Rothschild & Sons, 100 guineas; Mr. N. N. Sherwood, £100; Mr. G. Monro, £91; Sir T. Lawrence, Bart., 10 guineas; Mr. H. Williams, £35; Messrs. J. Veitch and Sons, 20 guineas; Mr. W. Bull, £13; the Vintners' Company, 10 guineas; the Merchant Taylors' Company, 10 guineas; Mr. Alma Tadema, 10 guineas; Mr. N. L. Cohen, 10 guineas; Mrs. Paine, 10 guineas; Mr. J. H. Sykes, 10 guineas; Mr. T. Peed, 10 guineas; Messrs. Protheroe & Morris, £12; Mr. G. F. Wilson, 10 guineas; Mr. T. B. Haywood, 10 guineas; and numerous other sums from various subscribers.

Between the toasts a choice selection of music was rendered, under the direction of Mr. Herbert Schartau, by Miss Teresa Blamy, Miss Carrie Curnow, Mr. Herbert Grover, and Mr. Robert Grice.

#### ROYAL BOTANIC SOCIETY'S FLORAL FÊTE.

As briefly announced in our last issue a children's Floral Fête was held in the gardens of the Royal Botanic Society, Regent's Park, on Wednesday, June 21st. The idea of this annual event is to imitate, so far as our climate will permit, the floral carnivals at Cannes and other places in southern Europe, and success has been attained. Fortunately on this occasion fine weather prevailed, and owing to the Duke and Duchess of Teck with H.S.H. Princess May being present, a large and fashionable assembly witnessed the parade. There were many mail carts, tastefully decorated with flowers and drawn by children, the first prize in this class going to one covered with Lilies by Mrs. White. Others were embellished with yellow Marguerites, Roses, Sweet Peas, and blue Cornflowers. A goat chaise decorated with Lilies, Roses, and Marguerites, well blended by Mr. East, secured a leading prize, as also did the sedan chair covered with Marguerites by Mr. Youens. Sir Augustus Harris and Lady Harris, who officiated as Judges, considered this as being the best of the exhibits; and there were many ponies, goats, and mail carts, all beautifully decorated with flowers of various kinds, and the whole presented a pretty sight. The only thing that appeared lacking was more greenery amongst the flowers, and that should be of a stout nature.

The great exhibition tent was erected for the purpose of accommodating the group of plants, cut flowers and window boxes, for which prizes were offered. Comparatively few exhibitors, however, put in an appearance. Messrs. W. Paul & Son, Waltham Cross, sent a beautiful collection of cut Roses, also some plants in pots. The former were shown in huge bunches and in boxes. The new Rose Clio was in splendid condition, and the same may be said of Spencer. L'Idéal, Maréchal Niel, Madame Hoste, W. A. Richardson, and Grand Duke Luxembourg were also very fine. A certificate was awarded for the last named, which is a splendid high coloured Tea-scented variety. A small silver-gilt medal was awarded Messrs. Paul & Son for their contribution. Mr. G. Mount, Canterbury, also sent a dozen boxes of cut Roses, amongst which were some splendid blooms of Maréchal Niel, Comtesse de Nadaillac, Innocente Pirola, and Marie Baumann (silver medal). Mr. Frank Cant, Colchester, secured a silver medal for some cut Roses, fresh and beautiful, especially Madame Cusin, Souvenir d'Elise, Marie Baumann and Ernest Metz.

Messrs. J. Laing & Sons, Forest Hill, were awarded a small silver-gilt medal for a magnificent group of flowering and ornamental foliaged plants. These were arranged with admirable taste, and comprised Orchids, Begonias, Caladiums, Dracænas, Palms, Ferns, Crotons, and other plants. Certificates were awarded for Begonias Countess of Craven (white) and Sir John Lennard, a splendid rich crimson double variety. Mr. R. Box, Croydon, sent a group of Caladiums, also Begonia blooms, for which a large silver medal was awarded. Certificates were given for Caladiums J. Laing and Lymington, and also for Begonia W. Phelps. Mr. C. Turner, Slough, had a group of Souvenir de la Malmaison Carnations and Crimson Rambler Rose, and a silver medal was recommended. Mr. R. Scott, gardener to Miss Foster, The Holmes, Regent's Park, was awarded a silver medal for a group of plants; and Mr. J. R. Chard, Stoke Newington, for table decorations. Mr. H. O. Garford, Floral Dépôt, Stoke Newington, gained a large bronze medal for a window box filled with plants tastefully arranged, and another bronze medal for two baskets of plants.

#### STYLOPHORUM DIPHYLLUM.

THE Celandine Poppy, though it has been in cultivation in this country for about forty years, is still an uncommon plant in our gardens. It is a hardy herb with a perennial rootstock, and has a considerable resemblance to *Chelidonium majus*, to which, however, it is much superior. It attains a height of 1 foot or 18 inches. The foliage is deeply pinnatifid, soft in texture, greyish-green above, and glaucous beneath. The flowers are freely produced in May and June; they are about 2 inches in diameter, and of a deep yellow colour. The plant is quite hardy, and will thrive in any light garden soil. It is easily raised from seed, and can be increased by division of the rootstock. It is a native of North-west America.

The illustration (fig. 93) was prepared from a plant which flowered recently in the alpine house at Kew. *S. japonicum*, the only other



FIG. 93.—STYLOPHORUM DIPHYLLUM.

species in cultivation, is sometimes confounded with *S. diphyllum*, but it is quite distinct. It is a native of Mandschuria and Japan. —A. B.

#### THE GUNTON PARK STRAWBERRIES.

MR. W. ALLAN kindly sent me a few days since some fruits of his fine new Strawberries. They travelled the long journey between here and Gunton admirably, turning out as bright and fresh as if just gathered; the bed of moss and the top layer of leaves of *Ampelopsis Veitchi* seemed to keep the fruits so cool. Then what an advantage is it in determining the merits of a fruit to be able to have enough of it. At the Fruit Committee meetings one has often to judge from eating half a Strawberry. That satisfies no one; but when it is possible to taste several, going over the respective sorts and coming back to the course again, then is a practical estimate as to flavour and other merits obtained.

The smallest fruits, those of Empress of India, have in them much of the old Pine flavour, the flesh soft and smooth, and a beautiful scarlet



colour—my favourite hue in the Strawberry. This is, I think, *par excellence* a high-class dessert variety, and is specially a ladies' Strawberry. Lord Suffield has firmer flesh, is long and tapering, of a rich crimson hue, flavour of a vinous kind; a delicious variety. Gunton Park gives large, flattish, somewhat cockscomb-shaped fruits of a rich deep blood crimson colour, flesh very firm, of striking flavour, but slightly acid. This should, especially that it is a great cropper, make a fine market variety. As Strawberries vary so much on diverse soils, it will be well if growers will get plants and give the sorts a good trial. Most certainly Mr. Allan has been more fortunate than the majority of raisers in hitting upon a fine vein of flavour.—A. DEAN, *Kingston*.

### RECORDS FOR EARLY PEACHES.

I GATHERED the first fruit of Alexander from a tree growing against a south wall on June 24th. From the same tree the first fruit was picked July 25th last year, which shows the extreme earliness of the present season. With us this Peach out of doors never fails to give a full crop of fruit; in fact we find it necessary to relieve the trees of more than half of those that set. The colour of the fruit is invariably high and the flavour good for the variety. All who value early outdoor Peaches should grow this sort.—E. MOLYNEUX, *Hants*.

SEEING in the *Journal of Horticulture* (page 500) that Mr. W. Iggulden gathered ripe fruit of the Alexander Peach from a tree growing against a south-east wall on the 18th inst., I write to say that I gathered excellent fruit of the same variety from a tree on a south-west wall and close to one of our forcing houses on the 16th inst. The tree is a large one for the variety, and is now (June 23rd) nearly cleared of the crop for this year.

The next earliest Peach out of doors here is Waterloo, on the same wall as the Alexander. It was ripe on the 21st. The fruits are not so large as those of Alexander but are of better quality, and, like it, very highly coloured. Amsden growing against a south wall will be ripe in the course of a few days. The fruit is of moderate size, highly coloured, of excellent quality. Following closely is Hales' Early, a first-rate early Peach as regards size, colour and flavour, but later than those varieties mentioned above ripening its fruit.—H. W. WARD, *Longford Castle, Salisbury*.



### ROSE SHOW FIXTURES IN 1893.

- June 29th (Thursday).—Eltham and Sittingbourne.  
 July 1st (Saturday).—Crystal Palace (N.R.S.).  
 „ 4th (Tuesday).—Bagshot, Diss, and Gloucester.  
 „ 5th (Wednesday).—Croydon, Ealing, Farnham, Hereford, and Lee.\*  
 „ 6th (Thursday).—Bath, Farningham, Manchester, and Norwich.  
 „ 7th (Friday).—Ulverston.  
 „ 11th (Tuesday).—Harleston and Wolverhampton.†  
 „ 12th (Wednesday).—Earl's Court and Tunbridge Wells.  
 „ 13th (Thursday).—Worksop (N.R.S.), and Woodbridge.  
 „ 14th (Friday).—Helensburgh.  
 „ 15th (Saturday).—New Brighton.  
 „ 20th (Thursday).—Bedford and Trcntham.  
 „ 25th (Tuesday).—Tibshelf.  
 „ 27th (Thursday).—Halifax and Southwell.  
 „ 29th (Saturday).—Bedale.

\* Shows lasting two days.

† Show lasting three days.

—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts*.

### STRAY NOTES.

THE following is a pleasing sensation. You arrive at your first show of the season, with no time to look round and see the state of affairs and what chance you have, but must begin setting up at once. As you do so, behind your back pass certain strollers, and some of these are as good critics as you could wish, and excellent reflections of the state of things in the present show. The first one says nothing, but he stops (it is a good sign, you are not altogether out of it; unless of course you are bad enough to be worth contemplation); presently another and another, and they all stop; you catch a muttered comment, "Some weight there!" and your ardour and confidence (and fumbling in my case) increase. At last an acquaintance comes by, "Hallo! R., where did you get those?" It does not sound complimentary, but it is good enough for you; the first prize is at all events within measurable distance, if not yet won. At the Westminster Tea Rose Show there seemed to be an unusual number of wandering Peris without their Rose boxes as qualifications for entering the rosarian Paradise of competition; but, sad though their case was, they certainly showed no jealousy, but were as happy in helping and congratulating the successful candidates as if they had won themselves. May it ever be so, as I believe it will.

It was certainly a revelation to me, who had not realised the widespread disaster to the Rose shows of 1893 from the drought and heat, to hear the universal report. Teas all over. H.P.'s over or worthless. Stocks nearly all dead. Cuttings in almost the same plight. The strangest part of it is that cut-backs seem to have done better than maidens, whose growth has been very poor. Dwarf maidens, whose strong far-reaching young roots one would have thought of greater power than those of cut-backs, have not stood the ordeal nearly so well. Standard maidens have done better, and standard maiden Teas look well. This is a puzzle; probably standard stocks are taught by Nature to root more deeply, as a hold against the wind. The outlook for next winter is serious, for the necessities of life such as Rose plants and Briar cuttings, not to mention hay and such trifles, are likely to be scarce and dear; but, at present, how to show thirty-six blooms three days running at local shows in July is the problem which is exercising the brains of East Anglian amateurs.

One great disadvantage of such an abnormal season is that in many cases no certain judgment can be passed on new Roses which we have not seen before. Gustave Piganeau and Mrs. Paul I have had good enough for any season, but I can find no excuse for Margaret Dickson, which on the strongest of maidens and cut-backs is distinctly not so good with me as the average of Merveille de Lyon. Here is another mystery, for the failure is not confined to my plants, and the fact that Messrs. Dickson have shown it particularly full in the centre, and that it is decidedly weak in that point with me and others, remains unaccounted for. I have had a good bloom or two of Salamander, and a prettily coloured one of the Duchess of Fife. The Duke of Fife has not been strong enough with me at present to differ very much in colour from Etienne Levet. Ethel Brownlow is coming stronger and better every year, and taking rank among the very best of the Irish Roses.

Of some new Roses seen lately at Mr. B. Cant's, I liked best La Fraicheur (Pernet et Ducher) which I suppose is a Hybrid Tea, pink, long-petalled and very promising, and Spenser (W. Paul & Son) H.P., which at first sight resembles Baroness Rothschild, but looks as if it might be fuller, and if so will be decidedly valuable. Mrs. Harkness shown at Westminster looks as if it might be good under favourable circumstances, but Merrie England appears in a harlequin costume, which does not look good taste. I wish some microscopical expert could have examined the base of the one shoot of the plant of Heinrich Schultheis which produced both these remarkable variations at Messrs. Harkness' nursery (the one being soft pink, and the other darker and splashed with white after the manner of Pride of Reigate), as it is surely possible that in these days something might be found out as to the cause of sports; and it would be a great thing if we could inject a sport microbe or bacillus into a shoot so as to produce such variations at will.

I forgot to mention last week one serious insect pest—thrips, which are always rampant here in a dry time, though in some places they seem unknown out of doors. They have spoiled many buds of Teas and La France with me and others, and have ruined my standard Teas from which I hoped much. I know of no remedy but syringing, though of course this must not be used when the buds are advanced.—W. R. RAILLEM.

### HORTICULTURAL SHOWS.

HITCHIN.—JUNE 26TH.

THIS annual Exhibition of Roses, herbaceous flowers, greenhouse plants, fruit and vegetables, was held on Monday, June 26th, in the Grammar School grounds. Despite the abnormally dry weather which has been experienced the Roses were of exceptionally good quality, almost equal to those of last year, and the number of competitors showed an appreciable increase. The arrangements of the Show reflect much credit on the Committee of Management and on Mr. W. G. P. Clark, the indefatigable and courteous Assistant Secretary. A list of the prizewinners in the Rose classes is appended, but space does not permit a detailed report of flowers, fruit, and vegetables, which were shown in excellent condition.

For forty-eight Roses, distinct, single trusses, Messrs. Harkness & Son were awarded the first prize, their stand being a magnificent one. The blooms were of fine substance, good shape, and well coloured. The varieties staged were Gustave Piganeau, Mrs. J. Laing, Chas. Lefebvre, Margaret Dickson, Camille Bernardin, Marie Fänger, Star of Waltham, François Michelon, Senateur Vaisse, Madame Cusin, The Bride, A. K. Williams, Souvenir d'Elise, Catherine Mermet, Fisher Holmes, May Quennell, Duchess of Bedford, Viscountess Folkestone, Jean Lelièvre, Mrs. Harkness, Countess of Rosebery, Duchesse de Morny, Ulrich Brunner, Lady Mary Fitzwilliam, Duke of Fife, Marquise de Castellane, Madame Wood, La France, Alphonse Souper, Prince Arthur, Heinrich Schultheis, Caroline Kuster, Comte Raimbaud, Boule d'Or, Etienne Levet, Jean Ducher, Dupuy Jamain, Princess Beatrice, Suzanne Marie Rodocanachi, Merveille de Lyon, Crown Prince, Merrie England, Victor Hugo, Francisca Kruger, Marie Verdier, and Margaret Boudet. Mr. Frank Cant, Colchester, was accorded the second prize for an exceptionally good stand; Messrs. G. and W. Burch, Peterborough, were third; and Messrs. Geo. Paul & Son, Cheshunt, fourth.

In the classes for members of the Society E. B. Lindsell, Esq., Bearton, Hitchin, was awarded the first prize in the class for twenty-four distinct varieties of Roses, single blooms of each, showing the following in almost



perfect form :—Horace Vernet, Mrs. J. Laing, Louis Van Houtte, Prince Arthur, A. K. Williams, Her Majesty, Marie Baumann, Duke of Edinburgh, Ulrich Brunner, Merveille de Lyon, Abel Carrière, François Michelin, Chas. Lefebvre, Caroline Kuster, Suzanne Marie Rodocanachi, Prince Camille de Rohan, Dupuy Jamain, Lady Helen Stewart, Duke of Wellington, Lady Dufferin, Lord Dufferin, Dr. Andry, Duchess of Bedford, and Alfred Colomb. J. Gurney Fowler, Esq., Gicbelands, South Woodford, was second with a very good stand ; and H. V. Machin, Esq., Gateford Hall, Worksop, was a close third. The competition in this class was especially keen, the entries all being of good quality.

In the class for twelve Tea or Noisette Roses, in distinct varieties, Mr. Jas. Parker, Oakfield, Hitchin, was first with Marie Van Houtte, Boule d'Or, Catherine Mermet, Innocente Pirola, Hon. Ethel Brownlow, Madame Lambard, Francisca Kruger, Anna Ollivier, Madame de Watteville, Souvenir de Paul Neyron, Comtesse de Nadaillac, and Madame Cusin. This was a really excellent stand. E. B. Lindsell, Esq., was second with a fine exhibit, and the Rev. W. H. Jackson, Stagdon Vicarage, Bedford, third. The first prize, which included the N.R.S. silver medal, for twelve distinct Roses was awarded to W. O. Innes, Esq., Hitchin, who exhibited well finished examples of Her Majesty, Beauty of Waltham, Ulrich Brunner, Rosieriste Jacoby, Maréchal Niel, Duke of Wellington, Madame Chas. Crapelet, Dr. Sewell, Horace Vernet, Prince Arthur, Chas. Lefebvre, and Alfred Colomb. Mr. Geo. Moules, Hitchin, was second with a collection which would in many shows have been worthy of the premier position. Mr. J. Bateman, Archway Road, Highgate, was third ; and Miss Bailey Denton, Orchard Street, Stevenage, fourth.

A. W. Lines, Esq., Hitchin, was an easy first in the class for nine Roses, distinct, showing Etienne Levet, Her Majesty, Alfred Colomb, Horace Vernet, Fisher Holmes, Innocente Pirola, Duke of Edinburgh, Souvenir d'un Ami, and Francisca Kruger ; the second prize going to A. Ransom, Esq., Benslow, Hitchin. In the class for six Tea or Noisettes, distinct, Mr. George Moules was an excellent first with Maréchal Niel, Jean Ducher, Souvenir d'Elise Vardon, Innocente Pirola, Madame Lambard, and Souvenir d'un Ami. Charles J. Grahame, Esq., Coombe Road, Croydon, was second with a very good stand indeed ; and W. O. Innes, Esq., third. The bronze medal of the N.R.S. and the first prize for six distinct Roses were taken by Mr. Leonard Moules, Orton Head, Hitchin, who staged E. Y. Teas, Her Majesty, A. K. Williams, Duke of Edinburgh, Duke of Teck, and Alfred Colomb. William Kingston, Esq., Grove Place, Bedford, was second ; and W. Hill, Esq., Hitchin, third.

E. B. Lindsell, Esq., was awarded the first prize for six blooms of any Hybrid Perpetual, staging beautiful examples of Mrs. John Laing ; H. V. Machin, Esq., was second with the same variety, and the Rev. W. H. Jackson third with Victor Verdier. In the class for six blooms of any Tea or Noisette, H. V. Machin, Esq., was first with charmingly coloured and excellently finished blooms of Souvenir de S. A. Prince, Mr. Jas. Parker being second, and the Rev. W. H. Jackson third with Marie Van Houtte. The first prize in the class for six distinct Roses, open only to those who had not previously won a prize for cut Roses from any society, was accorded to Mr. C. Norris, 17, Bedford Street, Hitchin. The bronze medals offered by the N.R.S. for the best Tea bloom and the best Hybrid Perpetual were taken by Mr. Jas. Parker with A. K. Williams in the latter, and by the Rev. W. H. Jackson with Comtesse de Nadaillac in the former.

In the class for thirty-six bunches of hardy perennial or bulbous rooted plants in distinct varieties, Messrs. J. Burrell & Co., Howe House Nurseries, Cambridge, were accorded the first prize for a grand exhibit. Amongst the most prominent flowers in this stand were *Alstromerias*, *Liliums*, *Delphiniums*, and *Iceland Poppies*. Messrs. Harkness & Son, Grange Nurseries, Bedale, took the second prize with a very creditable collection, Messrs. Laxton Bros., Bedford, being placed third. The competition was keen, each of the stands being very good.

#### SUTTON.—JUNE 27th.

THE annual Rose Show of the Sutton Amateur Rose Society was held in the Public Hall of that town on Tuesday, June 27th. The Exhibition was a most creditable one, and admirably arranged by the Committee and the energetic Secretary, Mr. Ernest Williams. One of the finest exhibits was a box of Comtesse de Nadaillac Roses, staged by the Rev. F. R. Burnside. Table decorations were a feature and a good one, Mrs. Ernest Wilkins being a successful competitor, as also was Mrs. O. G. Orpen in the classes for bouquets and baskets, her exhibits being the essence of grace and beauty, and denoting on the part of the lady a really admirable taste.

In the class for thirty-six distinct Roses, one bloom of each, and open to all nurserymen, Mr. B. R. Cant, Colchester, was deservedly awarded the first prize. This stand included Duke of Edinburgh, Countess of Oxford, Merveille de Lyon, Alfred Colomb, Mrs. J. Laing, Suzanne M. Rodocanachi, Gustave Piganeau, Annie Wood, Madame de Watteville, Charles Lefebvre, Her Majesty, Dr. Andry, Reynolds Hole, John Stewart Mill, Maréchal Niel, Innocente Pirola, Abel Carrière, Madame Cusin, Général Jacqueminot, Ernest Metz, Comte Benoit, The Bride, A. K. Williams, Madame C. Joigneaux, Dr. Sewell, Thos. Mills, Baroness Rothschild, Maurice Bernardin, Madame Hoste, Marie Verdier, Victor Hugo, Catherine Mermet, Fisher Holmes, Prince Arthur, and Dupuy Jamain. Mr. Frank Cant, Colchester, was an excellent second ; and Messrs. Geo. Paul & Son, Cheshunt, third.

In the class for twelve Teas or Noisettes in distinct varieties, Mr. B. R. Cant was again first, staging exquisite examples of Madame de

Watteville, Madame Hoste, Niphetos, The Bride, Souvenir d'Elise, Ernest Metz, Comtesse de Nadaillac, Maréchal Niel, Souvenir d'un Ami, Kaiserin Frederick, and Souvenir de S. A. Prince, Mr. Frank Cant being second with a beautiful stand, and Mr. Mount, Canterbury, third. The only competitor in the class for eight varieties of Roses, three trusses of each, was Mr. A. Slaughter, who was accorded the first prize. This stand included, amongst others, Général Jacqueminot, Fisher Holmes, A. K. Williams, and Prince Arthur in good condition. Rev. J. H. Pemberton was first in the class for twenty-four distinct Roses, showing Madame Raimbaud, Sir Rowland Hill, John Stewart Mill, and others. Mr. J. G. Fowler was second, and Mr. J. Slaughter third. In the class for twelve distinct Teas or Noisettes the Rev. F. R. Burnside was first, Caroline Kuster, Marie Van Houtte, and Souvenir de S. A. Prince being amongst his best. Mr. Mease, gardener to A. Tate, Esq., Leatherhead, and Mr. A. Slaughter were second and third in the order named.

Mr. W. F. Hughes won the ladies' challenge cup and the N.R.S. silver medal, showing Madame Victor Verdier, Mrs. J. Laing, Maurice Bernardin, Reynolds Hole, Dupuy Jamain, and Prince Camille de Rohan in fine form ; Mr. W. Hooper being second, and taking the N.R.S. bronze medal. Mr. R. W. Miller third. Mr. E. Wilkins was accorded the N.R.S. bronze medal for the best Hybrid Perpetual in the local classes for a perfect bloom of Horace Vernet.

Amongst the other successful competitors may be mentioned Mr. O. G. Orpen in the class for twelve distinct Roses ; Mr. W. Colin Romaine for six distinct Roses, three blooms of each ; Mr. M. Hodgson for nine Roses in distinct varieties, one bloom of each ; Mr. A. C. Gifford for six blooms in distinct varieties ; Mr. C. J. Grahame in the class for four distinct Roses, three trusses of each ; Mr. J. Bateman for six distinct Tea or Noisette Roses. In the class for twelve blooms of any one variety the Rev. F. R. Burnside was successful with Comtesse de Nadaillac, Mr. R. W. Miller was first for six trusses of any one Rose with Maréchal Niel, and Mr. Chadburn in the class for three Hybrid Perpetuals. Mr. F. D. Young, Roselands Nurseries, Eastbourne, staged a beautiful collection of cut Roses, "not for competition," as also did Messrs. Geo. Paul & Son.

#### CANTERBURY.—JUNE 26TH.

THE fifteenth annual Show was held at the Foresters' Hall, Canterbury, on Monday, June 26th. In spite of the unfavourable weather of late the Exhibition was a very good one. Mr. R. E. West, Mr. F. Warde, and Rev. H. Biron were unable to show, their Roses being over ; and Capt. Lambert, to the deep regret of all, was kept away by a severe domestic affliction. It was a matter of agreeable surprise that the flowers were so good, and the competition so keen.

The nurserymen's classes were not well filled, but the flowers were excellent. For thirty-six distinct varieties, Mr. Frank Cant was first with—Back row : Mrs. J. Laing (excellent), Duke of Edinburgh, The Bride, Duke of Connaught, Marie Baumann, Général Jacqueminot (fine), Ernest Metz, Louis Van Houtte, Marie Verdier (good), Merveille de Lyon, and Duke of Teck. Second row : Lady Helen Stewart (good), Madame Hippolyte Jamain (Tea, first rate), Chas. Lamb, Maréchal Niel, Prince Camille de Rohan (good), Souvenir d'un Ami, Victor Hugo, Innocente Pirola, Horace Vernet, Comtesse de Nadaillac, A. K. Williams (good), and Ethel Brownlow. Front row : Baroness Rothschild, Madame G. Paul, Dr. Sewell, Pride of Waltham, Auguste Rigotard, Comte Raimbaud (fine), Souvenir de Paul Neyron, Beauty of Waltham, Souvenir d'Elise, Dupuy Jamain, Prince Arthur, and Madame Chas. Crapelet (good). Mr. Mount, Rose Nurseries, Canterbury, was an easy second, his best flowers being A. K. Williams, Marie Baumann, Dr. Andry, Louis Van Houtte, and La Rosière. For twelve trebles there was a very close competition, Mr. F. Cant being first. His best were A. K. Williams, Prince Camille de Rohan, Baroness Rothschild, and Reynolds Hole. Mr. Mount, however, ran him very close, showing grand examples of Marie Baumann and Fisher Holmes. For twelve Teas Mr. Mount was easily first, showing Innocente Pirola, Caroline Kuster, Souvenir de S. A. Prince, and Niphetos in superb form. Mr. F. Cant was second, and Colonel Pitt third.

In the members' classes Colonel Pitt was an easy first with clean and solid blooms of Madame V. Verdier, Merveille de Lyon, Thomas Mills, Alfred Colomb (good), Marie Rady, Camille Bernardin (fine), Marie Baumann (grand), Duchess of Bedford, Duke of Wellington, Emilie Hausberg, Mons. Boncenne, Countess of Oxford, Baroness Rothschild, Pierre Notting, Lady Arthur Hill, Dr. Andry, Beauty of Waltham, and Comtesse de Paris. Mr. Stonley was second, and Mr. Cooper Wachter third. For six trebles Col. Pitt was again first, showing Camille Bernardin and Emilie Hausberg in grand form. Mr. Stonley was second, and Mr. R. L. Knight, third.

For twelve varieties, Col. Pitt was first ; Mr. H. Foster, second ; and Captain Christy, third. In Section B the exhibits were very good. Rev. J. R. Buchanan being first with Gloire Lyonnaise as we seldom see it. Miss Hawksworth was second ; and Mr. Honeyball (whose exhibits show great promise of future success) third.

For six Teas Rev. J. R. Buchanan was again first with a charming box, Marie Van Houtte, Madame Lambard, and Comtesse de Nadaillac being especially fine. In the smaller classes the chief prizetakers were Mr. B. Smith of Bifrons, Dr. Selby of Teynham, Mr. Honeyball, Mr. S. A. Smith, and Mr. D. Amos.

For six of one variety Mr. Cooper Wachter was first with fine blooms of La France. The same gentleman was first for twelve Teas in the members' class, Section A. The ladies had an opportunity of showing their taste in arrangement, in the somewhat novel form of a soup plate and soda water tumbler. Mrs. Cooper Wachter decorated with her



accustomed taste, and was a good first, followed, however, by a tasteful arrangement by Miss Pilch. Altogether the Exhibition was far beyond expectation, and it is only to be regretted that the general public show so little interest in the Queen of Flowers. May the Exhibition, now of long standing, go on and prosper.

In the amateurs' class for eighteen varieties, Colonel Pitt, Turkey Court, Maidstone, was first, showing Madame V. Verdier, Merveille de Lyon, Thomas Mills, A. Colomb, Marie Rady, Camille Bernardin, Marie Baumann, Duchess of Bedford, Duke of Wellington, Emilie Hausburg, Countess of Oxford, Baroness Rothschild, and Comte de Paris. Mr. J. Stonley, Canterbury, was second, best blooms Thomas Mills; and Mr. Cooper Wachter, Hoath, third, showing good blooms of Comtesse Nadaillac, A. K. Williams, Fisher Holmes, and Marie Baumann. For twelve varieties Colonel Pitt, Maidstone, was first; Mr. H. Foster, Ashford, second; and Captain Christy third. For nine Teas or Noisettes Mr. Cooper Wachter was first, Mr. J. Stonley second, and Colonel Pitt third, the best blooms in first prize box being Madame Cusin, Ernest Metz, Madame de Watteville, and Thérèse Levet. For six varieties, three blooms of each, Colonel Pitt was first, Mr. J. Stonley second, and Mr. R. L. Knight third, the best blooms being Camille Bernardin, Marie Baumann, Dupuy Jamain, and Marie Rady.

In the class for nurserymen only, thirty-six varieties, distinct, Mr. Frank Cant was first, the best blooms being Mrs. J. Laing, Marie Baumann, Gen. Jacqueminot, Baroness Rothschild, Auguste Rigotard, Victor Hugo, and Comte de Raimbaud. Mr. George Mount was a close second, showing grand blooms of Marie Baumann, Horace Vernet, Her Majesty, Alfred Colomb, Reynolds Hole (superb bloom), Louis Van Houtte, A. K. Williams. Mr. F. Cant was first for twelve varieties, three trusses of each, best blooms including Mrs. John Laing, Marie Baumann, A. K. Williams, Reynolds Hole. Mr. George Mount was second. In a class for amateurs and nurserymen for twelve Teas or Noisettes, Mr. George Mount won easily with a grand box, Mr. Frank Cant being second, and Colonel Pitt third.

#### EARL'S COURT.—JUNE 28TH.

NOTWITHSTANDING the numerous counter-attractions in the shape of flower shows elsewhere, exhibitors mustered strongly at the Gardening and Forestry Exhibition on the above date, when a special show of Roses and other flowers and fruit was held.

The principal class was for forty-eight Roses, distinct, single trusses, and in this six of the leading growers exhibited, making the competition somewhat keen. Messrs. Harkness & Sons, Bedale, were, however, awarded the first prize for a stand of magnificent blooms. These were Gustave Piganeau (grand), Lady Mary Fitzwilliam, Comte de Raimbaud, Marquise de Castellane, Le Havre, Mrs. J. Laing, Marie Baumann (fine), François Michelin, Caroline Kuster, Horace Vernet, Jean Ducher, Fisher Holmes, Madame Bravy, Thomas Mills, Pride of Waltham, Dr. Sewell, Madame Hausman, J. S. Mill, The Bride, Rosieriste, Captain Christy, Crown Prince, Earl of Dufferin, Sport, Alice Perkins, Louis Van Houtte, Madame Isaac Pereire, Dr. Andry, Heinrich Schultheis, A. K. Williams (splendid), Madame E. Verdier, Madame G. Luizet, Duchess of Bedford (grand), Madame Cusin, Charles Lefebvre, Souvenir de Paul Neyron, Edward Andry (very fine), Comtesse de Nadaillac, Senateur Vaisse, Barthelemy Joubert, Queen of Queens, Duke of Edinburgh, Dupuy Jamain, La France, Xavier Olibo, Souvenir de S. A. Prince, Camille Bernardin, and Marie Verdier. Mr. Frank Cant, Colchester, was a good second, showing grand blooms; Mr. B. R. Cant being third.

For twenty-four Roses, distinct, three blooms of each, Messrs. Harkness & Sons and Mr. Frank Cant were awarded equal firsts, so close was the competition. The varieties shown by Mr. Cant were Pride of Waltham, Horace Vernet, Baroness Rothschild, Charles Lamb, Dupuy Jamain, Madame Hippolyte Jamain, Prince Arthur, Catherine Mermet, Merveille de Lyon, Suzanne Marie Rodocanachi, Alfred Colomb, Marie Verdier, Duke of Wellington, Souvenir d'Elise Vardon, A. K. Williams (grand), Gustave Piganeau, Mrs. John Laing, Duke of Edinburgh, Madame Gabriel Luizet, Prince Camille de Rohan, Xavier Olibo (fine), Souvenir d'un Ami, Sir Rowland Hill, and Innocente Pirola. In Messrs. Harkness & Sons' stand A. K. Williams, Marie Baumann and Madame Gabriel Luizet were very fine. The third prize went to Mr. G. W. Burch, Peterborough, who staged excellent blooms.

Mr. G. W. Burch was first in the class for twenty-four single trusses, staging a grand stand of blooms. The varieties were Her Majesty, Senateur Vaisse, Ulrich Brunner, Marie Rady, Duke of Connaught, Alfred Colomb, Madame Eugenie Verdier, Madame Victor Verdier, Xavier Olibo, Innocente Pirola, Comte Raimbaud (grand), Mrs. J. Laing, Horace Vernet, Madame de Watteville, Pierre Notting, Madame Charles Crapelet, Exposition de Brie, Dr. Sewell, Madame Lambard, Victor Hugo, Madame Gabriel Luizet, Fisher Holmes, Etienne Levet, and Duke of Wellington. Mr. Frank Cant was second with fine blooms, and Messrs. Perkins and Sons, Coventry, third.

Teas and Noisettes were fairly good. In the class for twenty-four blooms Mr. B. R. Cant, Colchester, was first. The best flowers in this stand were Ethel Brownlow, The Bride, Souvenir d'Elise, Catherine Mermet, Mrs. J. Wilson, and Madame Lambard. Mr. F. Cant was second, these being the only exhibitors. Mr. G. Mount, Canterbury, was first for eighteen Teas and Noisettes. Messrs. D. Prior & Son, Colchester, were second, and Mr. G. W. Burch third. For twelve blooms of any Tea or Noisette, Mr. H. V. Machin was first with Souvenir de S. A. Prince, Messrs. W. Prior & Son were second with Maréchal Niel, and Mr. B. R. Cant third.

For eighteen bunches of garden Roses Messrs. G. Paul & Sons,

Cheshunt, were awarded first prize, the second honour going to Mr. Charles Turner, and the third to Mr. G. Mount. The class for twelve blooms of any dark variety was very good. Mr. B. R. Cant was placed first, however, for twelve splendid specimens of Alfred Colomb, Messrs. Harkness & Sons were second with Charles Lefebvre, Mr. F. Cant being third with Reynolds Hole in fine condition. Mr. G. Mount was first for twelve blooms of any light Rose, showing fine specimens of Her Majesty, Messrs. Harkness & Sons were second with Mrs. J. Laing, and Mr. B. R. Cant third with Her Majesty. Mr. G. Mount also won the first prize for a basket of Roses arranged for effect, the second award going to Messrs. Perkins & Sons, Coventry, and third to Mr. J. Wetton, Fulham.

In the amateurs' section Mr. E. B. Lindsell, Bearton, Hitchin, was first with twenty-four Hybrid Perpetuals, showing fine blooms. The best were Alfred Colomb, Charles Lefebvre, A. K. Williams, Horace Vernet, and Marie Baumann. The Rev. J. H. Pemberton, Havering-atte-Bower, was second, and Mr. J. Parkes, Oakfield, Hitchin, third. The Rev. J. H. Pemberton and Mr. E. B. Lindsell were awarded equal firsts for twelve Hybrid Perpetuals, both exhibitors staging good flowers. Mr. J. Gurney Fowler, Glebelands, South Woodford, was third in this class. The Rev. H. A. Berners, Harkstead Rectory, Ipswich, was placed first for twelve Hybrid Perpetuals, the second and third prizes going to Mr. J. Gurney Fowler and Mr. Harcourt P. Landon, The Lodge, Shenfield.

The first prize for eighteen Teas and Noisettes in the amateurs' section went to H. V. Machin, Esq., Worksop, as the only exhibitor in this class. The Rev. H. A. Berners was first with twelve Teas and Noisettes, which included The Bride, Madame Bravy, and Innocente Pirola in good condition. Mr. J. Parkes was third.

Miscellaneous exhibits include a grand collection of Roses, which represented all sections. The flowers were very fine and fresh. Messrs. Barr & Sons had a charming collection of hardy flowers. Mr. T. S. Ware, Tottenham, was awarded first prize for a grand group of Tuberous Begonias tastefully arranged. Mr. J. Walborn, West Kensington, had a group of Carnations, and floral decorations were shown by Messrs. Perkins & Co., J. Chard, and others. Mr. S. Mortimer, Rowledge, Farnham, sent a collection of Melons and sprays of Stephanotis, splendid flowers (silver-gilt medal).

Fruit was grandly shown, but want of space forbids a detailed report. Mr. J. McIndoe, Hutton Hall Gardens, Guisborough, was first with three bunches of white Grapes, showing Muscat of Alexandria; Mr. T. Osman, Ottershaw Park, being second with Buckland Sweetwater. Mr. Osman was first for black Grapes, and Mr. J. Travener, Woolmer, Liphook, second. Mr. McIndoe was first for six dishes of fruit. Mr. A. Ocock, Havering Park, Romford, second, and Mr. W. Robins, Hartwell House, Aylesbury, third. Mr. W. Allan, Gunton Park, Norwich, was first for three dishes of Strawberries. Mr. W. H. Divers was placed first for one dish, and Mr. W. Foreman, Louth, sent some fine Strawberries, named Ruby, Duchess of Connaught, Conquering Hero, and Climax. Mr. J. Gurney Fowler was first for a dish of Cherries, Mr. W. H. Divers being second. Figs were best shown by Mr. W. Allan, and Nectarines by Mr. W. Robins. Mr. Stocking, Marden Park, secured the leading prize for six Peaches, showing Bellegarde, Mr. W. H. Divers being second. Mr. H. Poulton, Streatham, was first with one Melon and also for three Melons, staging grand fruits. Messrs. T. Rivers & Son sent a collection of Cherries, Peaches and Plums, and Mr. W. Allan six boxes of Strawberries. Mr. Featherly, Gillingham, Kent, sent Tomatoes, Cucumbers, and Grapes.

#### RICHMOND.—JUNE 28TH.

BRIGHT but somewhat gusty weather attended the opening of the great annual Show in the pleasant Surrey town this year. There was a falling off in one or two departments so far as quantity was concerned, especially amongst the Roses, but the four large marquees erected were very well filled, and the Exhibition as a whole was a fine one. The arrangements were well carried out under Mr. Ford's directions. Time and space only permit of a much condensed report, but the principal awards are appended.

Roses are the flowers of the period and claim attention first. The display was hardly so extensive as last year, but the blooms were of excellent quality. Mr. B. R. Cant was first with forty-eight trebles, exhibiting a most even and fresh collection of flowers. A. K. Williams was extremely fine, while Gustave Piganeau, Comte de Raimbaud, and Alfred Colomb were very good. Messrs. Paul & Son, Cheshunt, were second with neat flowers but somewhat marred by the weather, Duke of Connaught and Alfred Colomb being perhaps the best. Mr. Rumsey, Waltham Cross, was third. There appeared to be only one exhibitor of twenty-four trebles—viz., Mr. Mount, who had an excellent stand, in which Mrs. John Laing, Marie Baumann, and Duke of Edinburgh were the most noteworthy. It was the same with twelve, Mr. W. Tayler being the only entrant to appear, and the second prize was given to him. Messrs. Perkins & Sons had the best twelve of one variety, a very even, fresh and richly coloured dozen of A. K. Williams. Mr. B. R. Cant was second with Reynolds Hole, and Mr. Mount third with Fisher Holmes. In the corresponding Tea class the latter won easily with a beautiful box of The Bride, Mr. B. R. Cant being second with Souvenir de S. A. Prince. R. E. West, Esq., Reigate, had a fair stand of twenty-four in the amateurs' class for that number, and won from Mr. Warwick, gardener to J. P. Kitchen, Esq. They were also first and second with twelve, Mr. Ladbury being third in both



cases. The principal winners in the local classes were Messrs. Wigan and Twining.

Groups of plants were numerous and good, albeit of a somewhat stereotyped character. Mr. H. E. Fordham was first, and may be complimented on the taste in arrangement displayed. Mr. Finch, gardener to W. Marriott, Esq., had in his praiseworthy desire to avoid over-colouring gone to the other extreme, but managed to secure the second prize. Mr. W. J. Brown was third, and Mr. H. James fourth, both groups being overloaded. There were other good groups in competition for the special prizes, as well as others not for competition, so that on the whole they formed a considerable feature. Palms and specimen plants were excellent. Mr. Finch was first in the principal class, and a grand Croton Queen Victoria, very large and well coloured, was amongst his plants, all of which were good. Mr. Debnam, gardener to A. Pears, Esq., was second; and Mr. Mould, third; the former having an excellent *Alocasia metallica* and *Maranta zebrina*. Mr. Finch also won with specimen plants in bloom, his *Ericas* being noble plants, and *Phenocoma prolifera* Barnesi in splendid condition. Mr. Mould was second, and Mr. Parsons third. Mr. Waut and Mr. Wilks (gardener to T. Cave, Esq.) were the principal exhibitors of Ferns.

Pelargoniums were not large, but very clean and well bloomed. Mr. Turner won with both Shows and Fancies. Mr. Watts, gardener to H. Little, Esq., was first with Zonals; Mr. Coombs, gardener to W. Furze, Esq., second; and Mr. F. Barnes, gardener to W. Grahame, Esq., third. They were fairly good throughout, but Ivy-leaved were only moderate, and a second prize was awarded to Mr. Watts. Mr. Howard, grower to H. Little, Esq., won with six Orchids, Mr. Young, grower to F. Wigan, Esq., following. Mr. Howard had some excellent pieces. Mr. Waut, gardener to F. Wigan, Esq., had some grand Caladiums, and was deservedly placed first; while Mr. Coombs won with Coleuses, Mr. Parsons, gardener to T. Twining, Esq., following. Messrs. Sutton's prizes for Gloxinias brought out some well-bloomed plants, but they appeared to have been subjected to wind or otherwise shaken.

Fruit was not very abundant, but there were several noteworthy exhibits. Mr. Osman, Ottershaw Park Gardens, had excellent Grapes and other produce in the leading class, and defeated Mr. Sage, gardener to Earl Dysart, somewhat easily, the latter being weak in Grapes. Mr. Osman won still more decisively with black Grapes, his clusters of Black Hamburgs being very fine. Mr. Ford, gardener to W. H. Ellis, Esq., was second, and Mr. Springthorpe, gardener to W. A. Bevan, Esq., third. Mr. Ford had his revenge with whites, winning from Mr. Osman with large bunches of Foster's Seedling. Mr. Wilkins, gardener to Lady Theodore Guest, third. In other Grape classes Messrs. C. W. Knowles, Sage, Parsons, Burton, and Wilks secured the prizes. Mr. Parsons won with Strawberries; Mr. Simmonds, gardener to W. Cunard, Esq., with Peaches, Nectarines and Tomatoes; and Mr. Wilks with Melons.

The special prizes for vegetables brought out some splendid produce. Mr. Wilkins showed extremely well for Messrs. Sutton's prizes, and received the principal award, the second going to Mr. Waite, gardener to Colonel Talbot, and the third to Mr. J. Smith, gardener to W. H. Odum, Esq. Space does not admit of particulars. In the competition for Messrs. Carter's prizes the result, so far as the two principal awards are concerned, was the same, Mr. Wilkins and Mr. Waite having a good fight for the first place, which fell to the former. Mr. Higginson, gardener to General Vialls, was third. Mr. Waite secured the first of the Society's prizes for a collection, and in another similar class Mr. Sage was successful.

Messrs. James Veitch & Sons sent a beautiful group of *Lilium longiflorum* surrounded by *Aralias* and *Eurya latifolia variegata*, not for competition. Messrs. J. Laing & Son had a delightful display of stove and greenhouse plants, with many fine Begonias. Mr. Chas. Turner contributed a collection of splendid Malmaison and Germania Carnations, which were greatly admired. Messrs. Peed & Son had a bright and tastefully arranged group of indoor foliage and flowering plants, Mr. William Icton a large group of Palms and foliage plants, Messrs. Hugh Low & Co. a very attractive collection of choice Orchids, Messrs. Cutbush & Co. a cheerful and varied display of hardy flowers, Messrs. H. Cannell & Sons some beautiful Begonias tastefully arranged, and Messrs. G. Jackman & Son several good stands of Roses.



#### HARDY FRUIT GARDEN.

**Moistening Fruit Tree Borders.**—It is important that the borders in which Peaches, Nectarines, Apricots, and other fruit trees are growing be kept sufficiently moist during the critical period of fruit development and growth extension. In applying moisture the full extent of the roots both downwards and laterally must be reached. During hot weather it is not only the sun which abstracts moisture from the soil, but the foliage by extra evaporation from its surfaces makes greater demands upon the roots. If the latter cannot supply the needful

support the foliage suffers, becoming a prey quickly to red spider and other pests. Well drained borders and those formed on light soils suffer the most. Even with the mulch deposited some time ago on the surface, with probably a good watering at or near that time, the extended dry weather will have created a demand for more moisture, especially now the fruit is swelling. If the borders have a smooth surface this will require loosening to allow the water to percolate easily. A fork carefully used will effect this without injuring the fibres. Do not give cold hard water until it has been softened and exposed to the weather. If obtainable, rain water is best. One good application, reaching the full extent of roots, is better than dribbles supplied at short intervals.

**Feeding Fruit Trees.**—It is wasteful and injurious to apply fertilisers to fruit trees if the borders or soil occupied with the roots should be dry. Therefore, before applying liquid or artificial stimulant contrive to have the soil moistened. Weakly and heavily cropped trees may then be fed with advantage, the assistance thus given aiding the growth of the wood and fruit. Follow with a mulch of partly decayed manure to prevent rapid evaporation. Subsequent waterings and heavy rains will carry the virtues in the manure down to the roots. Some of the many excellent chemical manures advertised may be applied beneficially now to trees swelling their crops.

**Syringing Wall Trees.**—To keep the trees clean syringing ought to be done frequently in dry, warm weather, daily if possible, commencing about 4 P.M. at this season. Early morning syringing in very hot weather is beneficial; especially where wall trees are situated in the neighbourhood of tall trees, bushes, or shrubberies is syringing necessary, and forcible applications reaching both sides of the leaves will keep red spider at bay. Young shoots of Cherries and Plums are in many places badly infested at the points with aphides. These ought previously to be dipped in a solution strong enough to kill the pests. Softsoap at the rate of half a pound of soap dissolved in four gallons of water with a pint of tobacco water added is safe.

**Cherries.**—Many varieties of Cherries are now either ripe or fast approaching that condition. To protect the fruit on large trees from birds is a difficult matter; but wall trees can be easily protected with nets hung in front from the top of the wall, keeping them clear of the foliage and fruit.

#### FRUIT FORCING.

**Pines.**—*Starting Suckers.*—The necessary provision for starting the suckers, which will soon be fit to be taken from the plants that formed the early section of summer fruiterers, should be made at once. A fermenting bed in a low damp house or pit affords the most genial conditions for the suckers, and the heat in it may be 95° at the start, but it is safer to have a steady temperature of about 90° at 6 inches from the surface. The suckers should be divided into two sizes, have the ends pared smooth with a sharp knife, and a few of the small leaves removed from the base, but only as high up as there are roots with a brown tint issuing from the stem at their axils. Place the suckers at once in 5 or 7-inch pots according to their size, and the soil being moist no water should be given until roots are made, but if the compost be rather dry water once to settle the soil about them. Good fibrous loam torn up by hand, with a quart of soot to each bushel, is the most suitable compost, draining the pots efficiently, and sprinkling a little soot on the crocks to prevent the ingress of worms. The compost should be firmly embedded in the pots and about the suckers, which will tend to a speedy fibry root-action, sturdier and more satisfactory growth in the plants. The house or pit should be kept rather close and moist for a week or ten days, shading effectually and giving but little air, and sprinkling the plants through a fine syringe once or twice a day according to external influences. Directly growth takes place gradually give more ventilation with less shade.

*Potting the Plants.*—Where the suckers are well rooted they must be shifted into the pots in which they are to fruit, so as to accelerate the growth as far as is consistent with sturdiness and a well-developed base. Ten-inch pots are quite large enough for Queens, Enville, and Black Jamaica, and 11-inch or 12-inch are ample for Providence and other strong growing varieties. Fibrous loam, but more lumpy than for suckers, with a 10-inch potful each of wood ashes and bonemeal to 3 bushels of the loam, grow Pines well, and to prevent worms entering the pots a little fresh soot or wood ashes may be sprinkled on a thin layer of turf placed over the drainage. Keep the plants well down in the pots, ram the soil firmly, and allow sufficient space for holding water.

**MELONS.**—*Houses and Pits Cleared of Fruit.*—As there is still time to secure a second crop or put out sturdy plants to afford a late supply of fruit, prompt decision must be made as to which it is to be. If the plants are healthy they may be reserved for another crop, in which case it is an advantage if young growths have been encouraged from the base of the plants in the latter stages of the first crop, and in some cases a good set of fruit will have been secured in these whilst the structures were kept drier for the fruit ripening. The old growths under such circumstances should be gradually cut away, reserving the most promising, and any wounds that bleed should be dried with quicklime. Remove a little of the surface soil and supply some lumpy loam. Soak with tepid water, and follow at once with liquid manure. If kept moist, but not saturated, the roots will soon spread in the loam, then they may be further encouraged by a mulching of horse droppings collected, spread in a shed and turned over two or three times before using, and it is best to supply a little of the mulch and often rather than a heavy coat all at once. Thin the fruits to half a dozen, or apportion the number to each plant according to the vigour. Second



crop fruit does not attain the size of the first, and more fruits may be had, yet overcropping is the greatest drawback to quality. If the plants have to be cut back allow a fair extension of fresh growth, and do not attempt to set the fruit until a good growth has been made, which thinly disposed will show and set fruit freely in a drier atmosphere.

*Replanting in Houses, Pits, and Frames.*—When the plants are not in a condition likely to carry a second crop, clear them out at once, remove the soil and a portion of the fermenting material, adding some fresh, which will revive the bottom heat sufficiently for the young plants. Cleanse the house or structure thoroughly. Nothing answers better as an insect destroying agent and a deterrent of attacks than syringing every part with a petroleum mixture, a wineglassful to 4 gallons of water, one person syringing into the vessel, while a second forcibly applies it to the woodwork. In a few days the smell will pass off, and the plants have the benefit of a clean start. Plant on hillocks or ridges in houses, and add soil afterwards, but in frames or pits a couple of barrowloads of soil in a light will grow a large plant, and it saves much trouble afterwards. Good strong loam is best, ramming it firm, and when warm plant the Melons. Those for frames should be strong, but not root-bound plants. Shade for a few days, and maintain a moist atmosphere, but ventilate freely after the plants become established.

*Setting the Fruit.*—Though artificial impregnation is not so essential now as earlier in the season, it is a mistake not to attend to this operation at the proper time, that is, when the flowers are fully open. If there be any difficulty, as there sometimes is in frames in getting the fruit to set, apply good linings and admit air freely, ventilating a little at night, so as to prevent the deposition of moisture on the blossoms, for to set it is necessary that the pollen be dry and the stigmas not destroyed by moisture. It is not desirable to use the knife much during setting, nevertheless light and air are essential, therefore keep the foliage fairly thin, and stop the laterals one joint beyond the pistillate blossoms after fertilising. Avoid giving water if it can be helped at this stage, yet the foliage must not flag for lack of it, nor the surface be wetted more than can be helped in supplying the requisite quantity.

## THE BEE-KEEPER.

### APIARIAN NOTES.

#### THE WEATHER AND BEES.

THE long-continued heat and drought gave way suddenly on the afternoon of the 22nd inst., and rain continued almost without intermission for twenty-four hours. This change was welcomed by bee-keepers, gardeners, and farmers. The thermometer on the 18th in the shade stood at 85° for a great part of the day, and on the morning of 20th it stood at 40°. On several nights preceding it registered 60°. Such excessive heat with dust and drought was not favourable to a honey flow. Our season is now on, and with a few fine days during the next two or three weeks bees will exert themselves, and heavy hives with well filled and sealed supers will result.

#### PUNIC BEES.

For the first time during the past three years I have been able to test the honey-gathering qualities of the pure race. The swarm referred to at page 512, owing to some of the bees on returning not finding their queen in the cluster, was not as large as it might have been. When weighed on the evening of the 18th it had risen in weight 25 lbs., although supplied with strips of foundation an inch broad only. The swarm of crossed Punic referred to on the same page with two working days added, weighed 102 lbs.; 24 lbs. of that have been taken in supers. With us these bees are working well, and I would advise bee-keepers to give them a fair trial. It is remarkable that only 5 per cent. of my Punics have swarmed, the others working as yet contentedly in their two tier of supers ready for additional room; while my pure Punic swarm on a return of fair weather will be supplied with them.

#### VENTILATION—WAX EXTRACTING.

When the temperature was high the ventilating floors were dropped, but to little purpose, as it allowed a greater rush of heated air to enter the hive. Shading, by hanging a mat loosely round the hive, has a better effect when there are no cooling breezes. When the heat was at its greatest one of our Carniolan hives turned its drones outside, where they clustered till the evening, when they re-entered the hive.

A sun wax extractor is of but little service in this country, the sun being too low when most wanted; still it is a mistake to allow scraps of wax to lie about as a nidus for moths. All scraps of wax, either as a point of economy or as a deterrent to the increase of these pests, should be melted at once, or dropped into boiling water till a convenient time to extract properly. When the temperature rises to 75° and upwards a solar extractor is service-

able. All that is necessary is a tin dish about 3 inches deep, of any size, but oblong is the best shape, covered with a pane of glass let into a light frame, having a projecting ledge to prevent slipping and escape of heat, and stood upon a slate or other conductor. The tin should have a gateway of glass from the lower end, raised a little to allow the melted wax, but not the refuse, to run through. It should be raised to a proper angle to catch the direct rays of the sun. I have one placed upon an elevator which turns to any angle. Although I have mentioned tin, it would be far more effective if made of copper, pewter, or any of the combination metals of a highly conductive nature.

#### HONEY CANDYING IN THE COMB.

"R. A. C." wishes to know if honey candies in the comb. Honey sometimes candies in the comb, especially that gathered from Charlock, but more quickly out of the hive than in it, unless it is kept in a dry and warm place. Sugar also crystallises in the comb, but it partakes more of candy than honey crystals. Doubtless the best samples of honey in the comb do not crystallise so readily as inferior ones. The care you exercise with your honey in keeping it clean and having it of the best quality is commendable. The Lanarkshire hives are a success, entirely through the impossibility of damp injuring the bees in the latter. It is clear proof that bee-keepers are the best judges.—A LANARKSHIRE BEE-KEEPER.



\*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Sparrow Guns** (W. S.).—The address you require is E. P. Timmins, 90, Balsall Heath Road, Birmingham.

**Chrysanthemum Soil** (D. M. S.).—The plant arrived too late for examination to give a detailed reply in this issue, but the matter shall be attended to next week.

**Night-blooming Cereus** (R. T. H.).—The facts set forth by our correspondents on page 498 show that it is not an unprecedented occurrence for a Night-blooming Cereus to have more than nine flowers at one time. The remarks of Mr. Major on page 516 of this issue are interesting.

**Tomato Disease** (St. Julien).—The matter is being investigated, and a reply will be given in our next issue. The leaf, however, arrived in a very poor condition, and it would be better to always pack such in a box. The article "What Pays Best?" by a "Market Grower," in the present issue, you will doubtless read with interest.

**Lord Napier Nectarine Fruits Shrivelled and Rusted** (J. B.).—The Nectarines are not matured, though of good size, but that is not the cause of the shrivelling nor of the rust, which are peculiarities of this variety. The shrivelling generally indicates fine fruit and high quality, vigorous trees being more subject to it than those only moderately so, and the fruit smaller, and it is less pronounced in early forced fruits than in those produced by trees in midseason or late houses. That the shrivelling is characteristic may be inferred from the fact that fruits grown on the upper side of the trellis, and exposed to the sun, are no more affected than those on the under side of the trellis, where they are shielded from direct sunshine, and that it almost invariably is most pronounced at the apex of the fruit. This greatly detracts from its appearance, but the quality is excellent, as is shown by ants preying upon it before it is ripe, leaving most every other variety for it. The rust is generally an accompaniment of the shrivelling, and rarely extends beyond the shrunken parts. We find the rust most pronounced where heavy or frequent syringing is practised, especially when the trees are vigorous, and the water hangs on them during the night and remains until the morning, and where the water used is impregnated with lime or iron. Both the shrivelling and rust are less prevalent where clear soft or rain water is used, but under no conditions have we seen full-sized and well-ripened fruit of this variety without slight shrivelling and its accompanying rusty appearance.



**Peach Leaves Eaten** (W. M.).—The perforated leaves have been eaten by some weevil, which, from the gnawing, appears to be a species of *Otiorhynchus*, the black Vine weevil (*O. sulcatus*), and the clay-coloured or pitchy-legged weevil (*O. picipes*) being the most common preys on Peach leaves, and not infrequently feed in company. The best remedy is to capture the weevils by spreading cloths beneath the trees in the daytime (housemaid's dust sheets answer well), and at night the house should be cautiously entered with a lantern giving a good light when exposed, but it ought to be covered until the tree or trees be reached, then turn on the light, shake the branches sharply and capture the fallen beetles, killing them by placing in boiling water or a pail containing gas tar. This repeated from time to time will clear the trees from the pests.

**Primula rotundifolia** (M. C.).—The accompanying sketch (page 94), although reduced, will give you an idea as to the appearance of this *Primula*, which is considered by some authorities to be quite as hardy as *P. rosea*, with a similar habit, and requiring much the same kind of treatment. The leaves, as in *P. rosea*, are deciduous, dying off in winter, forming a small compact sulphury white bud, which may be easily protected from the ravages of birds and insects with a few small pebbles or a handful of cocoa-nut fibre. The leaves are orbicular, cordate, crenately toothed, bright green above, and entirely covered with meal on the under side, somewhat resembling *P. Stuarti* or *purpurea* (of Royle); the stalk 4 to 12 inches long, and the blade 3 to 4 inches in diameter. The flower stem grows from 6 inches to a foot in height, with two and often three whorls of bright rosy red flowers as large as those of *rosea*, with a pale yellow ring round the throat. So far as our



FIG. 94.—PRIMULA ROTUNDIFOLIA.

experience goes it will grow as readily as the hardy *P. rosea*, all the capsules being large and promising plenty of seeds. It is found on the Singahelah range from 12 to 18,000 feet above sea level, and from Kashmir to Sikkim.

**Insects on Duke of Albany Peas and Parsnips** (T. N. B.).—The specimen pods of Duke of Albany Peas, from a sowing made on March 7th, are very good; those from another sowing on March 17th are troubled with two kinds of insects—one, thrips on both the haulm and pods, but the insects were not present, therefore we are unable to tell the species with exactitude, yet the traces are those of *Heliothrips minutissima*. The best remedy for these pests is to syringe the Peas with a solution of softsoap, 2 ozs. to a gallon of water, or ordinary soap-suds may be used, provided they do not contain bleaching powder or large quantities of washing soda, straining them so as not to clog the syringe; afterwards follow with a few good washings with clear water in the evening of alternate days. Although there is no insect in the blotches in the leaflets, the larva of the Pea fly (*Phytomyza nigricornis*) has been there, and probably now is in other parts. As the larvae live by mining and eating the internal tissue of the leaves, the only remedy is to crush them between the finger and thumb, or pick off the affected parts and burn them, but the former plan is best, as the latter weakens the Pea growths. For the green fly on the Parsnips you may proceed in a similar manner as advised for thrips on the Peas, adding a pint of tobacco juice to every 3 gallons of the softsoap solution. The other pest is the larva of the Celery and Parsnip fly (*Tephritis onopordinis*), which, burrowing in the leaves, has produced the large brown patches. The remedy is to crush the larvae between the finger and thumb when the spots are quite small, or pick off and burn the affected parts. The leaves may be sprinkled whilst damp with fresh dry soot to prevent the fly depositing its eggs.

**Lord Napier Nectarines Shrivelled at the Apex** (G. G.).—The fruit is slightly rusted and shrivelled at the apex, and is peculiar to and characteristic of the variety, especially in a hot and dry season. There is nothing in your management to account for the defectiveness of the fruit. It does not affect Peaches, at least not the varieties grown in this country, which are not clingstones, and in Nectarines it is mostly confined to them, rarely affecting the freestone varieties. See reply to "J. B." on page 526.

**Mangold Wurtzel Plants Eaten by Grubs** (B. B. H.).—The "grubs" are the larva of the common crane fly or daddy longlegs (*Tipula oleracea*), which have such tough skins as to have procured for them the name of "leather jacket." They generally lie, as you describe, about an inch below the surface, and near to the plants they prey upon, hence slices of Mangold Wurtzel, Swedes, Carrots, and Potatoes may be employed with success for the protection of the seedlings. They should be sunk an inch or so below the surface of the soil, and be examined every two or three days, the grubs found in them being removed and destroyed. This is a tedious method, but a certain cure. As a top-dressing, nitrate of soda at the rate of 2 cwt. per acre acts well, both by benefiting the plants and injuring the grubs. The nitrate of soda should be finely powdered and be sprinkled on the drill, so as to act quickly and with least prejudice to the plants, it being best to apply it near them, but keep it from the hearts of the plants. The grubs seem to be paralysed by the nitrate of soda, become helpless, ultimately dying. Guano  $1\frac{1}{2}$  cwt., kainit 1 cwt., superphosphate 1 cwt., and salt 2 cwt., mixed, per acre, have also been applied with advantage.

**Names of Plants.**—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*F. D.*)—*Kalmia latifolia*. (*N. P.*)—*Spiraea Thunbergi*. (*L. E.*)—*Lycaste Skinneri*, a good form. (*Amateur*)—*Spiraea aruncus*.

## COVENT GARDEN MARKET.—JUNE 28TH.

TRADE brisk with good supplies.

				FRUIT.			
	s.	d.	s. d.		s.	d.	s. d.
Apples, half sieve .. ..	0	0	to 0 0	Grapes per lb. .. ..	1	6	to 2 6
„ Tasmanian, per case ..	6	0	12 0	Lemons, case .. ..	10	0	15 0
„ Nova Scotia, per barrel .. ..	0	0	0 0	Oranges, per 100 .. ..	4	0	9 0
Cherries, half sieve .. ..	4	0	8 0	Peaches, per doz. .. ..	1	6	8 0
Gooseberries, half sieve ..	1	6	2 0	St. Michael Pines, each ..	2	0	5 0
				Strawberries, per lb. ..	0	6	1 6
				VEGETABLES.			
	s.	d.	s. d.		s.	d.	s. d.
Asparagus, per bundle ..	1	6	to 4 0	Mustard and Cress, punnet	0	2	to 0 0
Beans, Kidney, per lb. ..	0	6	1 0	Onions, bunch .. ..	0	3	0 5
Beet, Red, dozen .. ..	1	0	0 0	Parsley, dozen bunches ..	2	0	3 0
Carrots, bunch .. ..	0	4	0 0	Parsnips, dozen .. ..	1	0	0 0
Cauliflowers, dozen .. ..	2	0	3 0	Potatoes, per cwt. .. ..	2	0	5 0
Celery, bundle .. ..	1	0	1 3	Salsafy, bundle .. ..	1	0	1 6
Coleworts, dozen bunches ..	2	0	4 0	Scorzonera, bundle .. ..	1	6	0 0
Cucumbers, dozen .. ..	1	6	3 0	Seakale, per basket .. ..	0	0	0 0
Endive, dozen .. ..	1	3	1 6	Shallots, per lb. .. ..	0	3	0 0
Herbs, bunch .. ..	0	3	0 0	Spinach, bushel .. ..	3	0	3 6
Leeks, bunch .. ..	0	2	0 0	Tomatoes, per lb. .. ..	0	4	0 7
Lettuce, dozen .. ..	0	9	1 0	Turnips, bunch .. ..	0	4	0 6
Mushrooms, punnet .. ..	0	9	1 0				

## AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

				Orchid Blooms in variety.			
	s.	d.	s. d.		s.	d.	s. d.
Arum Lilies, 12 blooms ..	1	6	to 3 0	Myosotis, dozen bunches ..	1	6	to 3 0
Bouvardias, bunch .. ..	0	6	1 0	Orchids, per dozen blooms	3	0	12 6
Caleolaria, dozen bunches ..	4	0	6 0	Pelargoniums, 12 bunches ..	6	0	9 0
Carnations, 12 blooms ..	1	0	3 0	Pelargoniums, scarlet, doz. bunches .. ..	3	0	6 0
Carnations, dozen bunches ..	3	0	6 0	Pinks, dozen bunches .. ..	1	6	4 0
Cornflower, dozen bunches ..	2	0	3 0	Primula (double) 12 sprays	0	9	1 0
Eucharis, dozen .. ..	3	0	4 0	Pyrethrum, dozen bunches ..	2	0	6 0
Gardenias, per dozen .. ..	2	0	4 0	Roses (indoor), dozen .. ..	0	6	1 6
Iris, various, doz. bunches ..	6	0	12 0	„ Red, doz. bunches .. ..	4	0	8 0
Lilium candidum, dozen blooms .. ..	0	6	1 0	„ Tea, white, dozen .. ..	1	0	2 0
Lilium longiflorum 12 blooms .. ..	3	0	5 0	„ Yellow, dozen .. ..	2	0	4 0
Maidenhair Fern, dozen bunches .. ..	4	0	6 0	Spiraea, dozen bunches .. ..	3	0	6 0
Marguerites, 12 bunches ..	2	0	4 0	Sweet Peas, doz. bunches ..	3	0	6 0
Mignonette, 12 bunches ..	3	0	6 0	Sweet Sultan, doz. bunches ..	3	0	4 0
				Tuberose, 12 blooms .. ..	0	6	1 0

## PLANTS IN POTS.

	s.	d.	s. d.		s.	d.	s. d.
Arbor Vitae (golden) dozen	6	0	to 12 0	Lilium Harrissi, per dozen	12	0	to 24 0
Aspidistra, per dozen ..	18	0	36 0	Lobelia, per doz. .. ..	4	0	6 0
Aspidistra, specimen plant	5	0	10 6	Lycopodiums, per dozen ..	3	0	4 0
Caleolaria, per dozen ..	4	0	6 0	Marguerite Daisy, dozen ..	6	0	12 0
Crassula, per dozen .. ..	12	0	24 0	Mignonette, per doz. .. ..	4	0	8 0
Dracana terminalis, dozen	18	0	42 0	Musk, per dozen .. ..	2	0	4 0
„ viridis, dozen .. ..	9	0	24 0	Myrtles, dozen .. ..	6	0	9 0
Ericas, various .. ..	12	0	24 0	Nasturtiums, per dozen ..	4	0	6 0
Euonymus, var., dozen ..	6	0	18 0	Palms, in var., each .. ..	1	0	15 0
Evergreens, in var., dozen	6	0	24 0	„ (specimens) .. ..	21	0	63 0
Ferns, in variety, dozen ..	4	0	18 0	Pelargoniums, per dozen ..	6	0	12 0
Ferns (small) per hundred	5	0	8 0	„ scarlet, per dozen .. ..	3	0	6 0
Ficus elastica, each .. ..	1	6	7 6	Petunia, per dozen .. ..	6	0	9 0
Foliage plants, var., each ..	2	0	10 0	„ single, in boxes .. ..	1	6	3 0
Fuchsia, per dozen .. ..	5	0	9 0	Saxifrage .. ..	12	0	18 0
Ivy Geraniums .. ..	4	0	6 0	Spiraea, per dozen .. ..	6	0	12 0
Lilium lancifolium per doz.	12	0	24 0				





### THE GREAT DROUGHT.

IN recording the effect of the drought upon farm crops the common tendency to lay stress upon extreme cases is altogether misleading and mischievous. According to some reports grain crops are completely burnt up, and the land is an arid waste, Rye, Wheat, and Barley have perished, vast tracts of land remain unploughed owing to the hardness of the soil, and the hay crop is a failure. Undoubtedly this may be said truthfully of certain localities, but it is assuredly not applicable to the country generally. On the week in which the Royal Agricultural Society's Show opened at Chester we travelled from London to Manchester by the Midland Railway, then on to Chester, returning by the North-Western route. Generally, crops were green and flourishing; hay-making was in progress everywhere, and though the crop is a short one on many farms there are numerous exceptions, especially in Lancashire, Cheshire, and Staffordshire, where a really good crop of grass was being made into hay. Near Lichfield we saw a crop of mixed seeds, so abundant that the haycocks a'most touched. It was a remarkable crop for any year, and was probably to be accounted for by the huge sewage pipe which we saw running in its direction from Lichfield. Everywhere hay of the very best quality was being made, and if only rain comes freely and soon it will be quite possible to make enough silage to afford an ample supply of wholesome nutritious fodder for next winter and spring.

A question frequently upon the mind is, Will farmers generally rise to the emergency, and turn to ensilage if they have green crops to spare for it later on? There can be no doubt that hay will be scarce next winter; it is so scarce now that it is said to be rising in price daily, and it is reported that on June 17th in Cumberland Market the best English meadow hay was selling at £8 10s. per load, which means about £9 10s. per ton. At the Royal Show at Chester we saw a bale of Timothy hay, compressed and bound with wire, which the Canadian agent told us could be delivered from Canada at Liverpool profitably for £4 5s. per ton. The bales weigh from 1 to 2 cwt., and the hay is sweet and wholesome enough, but it will never spoil the market for our best meadow hay, and though it may be useful horse fodder when cut into chaff, its hard wiry stalks yield chaff which is much inferior to that obtained from well-managed winter Oats. In his book on "Permanent and Temporary Pastures," Mr. Martin J. Sutton says of Timothy, "I regard it as decidedly inferior to Foxtail. The herbage is coarse, the stalks soon become hard, and their increased feeding value in that state is of no avail if cattle refuse to graze them, as they undoubtedly do; or if the presence of this Grass in abundance lowers the price of hay." It is therefore only under peculiar circumstances, or as a last resource, that we should advise the purchase of this hay; and if, as we were told, £4 5s. per ton is the lowest price at which it can be profitably landed at Liverpool, why it is unlikely to make its way here, at any rate in ordinary seasons.

Corn crops, though the straw is short, are generally good. Some of the spring corn, especially Oats, is uneven, having patches in ear, while other patches show no sign of ears—evidence of some of the seed corn having started into growth before the other. Very much of the Wheat is in excellent condition, inferior crops showing plainly low fertility of soil as the true cause of weakly growth. In all rich soil the influence of the drought upon Wheat is visible in the dwarfed growth rather than in any other way.

Of root crops we saw some excellent fields of Mangold, Swedes, and White Turnips, all with a full plant sufficiently advanced in growth to be safe from insect attacks. Judging

from the remarkable vigour of growth, there was plenty of farmyard manure to afford moisture to the young plant. We have always recommended ridging for early root crops, with plenty of manure in the furrows. This year it has been absolutely indispensable to sustain growth and insure a crop. There are hundreds of acres under Potatoes in the neighbourhood of Manchester and Warrington, all of them flourishing enough; the earlier sorts were being lifted for market, the moderate haulm growth showing that the crop was not a heavy one.

The Lichfield sewer was a reminder of what a boon town sewage would be to farmers this year, but systematic irrigation enters very little into British farming economy. Mr. G. F. Young, of Swineshead Abbey, South Lincolnshire, whose farm is intersected by one of the main fen drains, is a notable exception, for by means of a powerful fire engine he is pumping water from the drain at the rate of 80 tons per hour on to his crops. The water is delivered in a spray, which covers an area of from 70 to 80 yards, falling with an evenness and gentleness almost equal to heavy rain. Flexible piping several hundred feet in length is attached to the engine, which is kept stationary during the pumping.

### WORK ON THE HOME FARM.

With the hay off the land we are anxiously looking for rain. If it comes soon and abundantly growth is certain to follow freely enough, but the parched land requires a heavy downpour to reach the roots of established crops. With such fine hot weather for the haymaking there has been some risk of overheating in the ricks from carting hastily. To avoid this small ricks are sometimes made, but we altogether prefer large ricks containing from 20 to 30 tons. Then, by carting when the hay is well made, and having one or two air shafts from the bottom during the rick building, hay of the highest quality, that will retain its condition in bulk for two or three years, is a certainty. We regard air shafts as indispensable even in the driest weather, because a large mass of new hay always generates moist heat excessively, and the shafts are just safety valves out of which the hot vapour escapes freely. The effect of over-heating is to dry up the moisture, to induce spontaneous combustion, or to discolour the hay so much that the centre of the mass is almost black when it is cut; such discolouration shows how narrowly the rick has escaped destruction by fire.

On farms where the hay crop on meadows is much below par do not forget what excellent fodder Oat straw is when cut and harvested early. When required specially for this purpose do not suffer the straw to ripen as it stands, but mow just as the grain appears, or at any rate before it begins to harden. Mow into swathes, which turn sufficiently to "hay" the straw, then cart and stack. If carted wet or too green the straw becomes musty in the stack and is unpalatable. It is either used whole or cut into chaff; sheep, cattle, and cows are all fond of it, but we prefer good meadow hay for the dairy cows. Where live stock has had to be turned into fields reserved for hay, and the outlook for next winter is consequently gloomy, this hint about Oat fodder may prove useful. Do anything rather than force half finished beasts and sheep upon the market, as so many are doing just now. If you have managed to keep stock in fair condition till now by all means make a special effort to hold them over till the autumn or early winter, when really good beasts will probably command better prices than they have done for some time. That is our hope; we can say nothing more positive, as the keen importer may also make a special effort.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N. : Long. 0° 8' 0" W. : Altitude. 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1893.	Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
June.		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. 18	30.338	73.7	61.2	N.E.	66.2	85.0	57.0	122.2	49.6	—
Monday .. 19	30.047	73.3	62.3	N.E.	66.2	90.4	52.3	134.3	45.1	—
Tuesday .. 20	29.883	58.1	55.8	E.	67.0	66.7	56.8	84.0	54.8	—
Wednesday .. 21	29.891	59.1	51.2	S.E.	64.9	68.7	51.9	97.1	45.8	—
Thursday .. 22	29.654	65.0	53.7	S.	62.9	73.8	50.2	118.9	44.4	0.242.
Friday .. 23	29.330	60.1	56.3	W.	62.9	67.9	54.2	118.5	53.0	0.049
Saturday .. 24	29.480	57.0	52.0	W.	61.9	64.8	49.3	112.2	47.1	0.010
	29.803	63.8	56.4		64.6	73.9	53.1	112.5	48.5	0.301

### REMARKS.

- 18th.—Clear and hot throughout.  
 19th.—Cloudless morning, then very hot, but frequent cloud in afternoon; overcast and threatening from 6 P.M. to 7.30 P.M., but with a few spots of rain. Cloudless again later.  
 20th.—Slight drizzle from 6.30 A.M. to 8.30 A.M., and overcast till about 7 P.M.; clear evening.  
 21st.—Generally overcast, with occasional spots of rain; a little sunshine in afternoon.  
 22nd.—Overcast at times, with spots of rain in morning; bright afternoon; overcast after 6 P.M., and rain from 11.30 P.M.  
 23rd.—Rain till 1.30 A.M., and from 4.30 to 7.30 A.M.; occasional sunshine in morning; bright windy afternoon.  
 24th.—Sunny at times, but generally overcast; slight showers in afternoon.  
 Notwithstanding the great fall of temperature after the 19th, the mean for the week is again above the average.—G. J. SYMONS.















